

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
700 HEINZ AVENUE, SUITE 200
BERKELEY, CALIFORNIA 94710



November 13, 1992

CERTIFIED MAIL

Mr. Leigh Olson
Director of Human Resources
Litton Solid State Microwave
3251 Olcott Street
Santa Clara, California 95054

EPA ID No.: CAT000625392

Dear Mr. Olson:

REPORT OF VIOLATIONS

On May 30, 1991 and September 30, 1992, the Department of Toxic Substances Control (Department) conducted inspections of the Litton Solid State Microwave (LSSM) facility in Santa Clara, California. As a result of the inspection, the following violations were found:

VIOLATIONS

1. Title 22, California Code of Regulations (Cal. Code Regs.), Section 67247(c) as replaced by 66265.177(c).
- LSSM violated Title 22, Cal. Code Regs., Section 67247(c) as replaced by 66265.177(c) in that on May 30, 1991 and September 30, 1992, they failed to segregate hazardous wastes which were incompatible with each other.

On May 30, 1991, LSSM stored a 30-gallon polyethylene drum of hydrofluoric acid (HF) about 12 inches from a 1-quart glass container of cyanide in bay 1 of the drum storage area. Strong mineral acids upon contact with inorganic cyanide rapidly form extremely toxic and flammable hydrogen cyanide gas.

On September 30, 1992, LSSM stored a one-gallon plastic container containing hydrogen peroxide, ammonium hydroxide, and gallium arsenide trace in the flammable bay of the drum storage area less than two feet from several containers of various sizes containing flammable liquids. Hydrogen peroxide is an oxidizer which is incompatible with flammable substances.

On September 30, 1992, LSSM stored one black 35-gallon

(approximate) polyethylene container containing a mixture of gallium arsenide and aluminum oxide in the corrosive bay of the drum storage area. The 35-gallon container was located approximately 4 feet from a 55-gallon container storing hydrofluoric acid, nitric acid, and water. Gallium arsenide reacts with acids and acid vapors to form arsine, a flammable gas.

2. Title 22, Cal. Code Regs., Section 67243(b) as replaced by Section 66265.173.(a).

LSSM violated Title 22, Cal. Code Regs., Section 67243(b) as replaced by Section 66265.173.(a) in that they stored several open containers of hazardous waste in the ISD drum storage area.

On May 30, 1991, the following hazardous waste containers were observed open in the ISD drum storage area:

- Five mercury lamps in an open cardboard container.
- One open 30-gallon polyethylene drum of A-40 grade etchant stripper, with funnel on top, in bay 2.
- One vacuum bag in an open cardboard box placed in a polyethylene 10-gallon tray in bay 4.
- Several metal bars of soldering flux placed in an open cardboard box in bays 3 and 4.
- One empty open white polyethylene 1-gallon container in Bay 1 contaminated inside with oily and grease spots.

On September 30, 1992, they stored one open black 55-gallon hazardous waste drum containing rags contaminated with chlorobenzene in the ISD storage area.

3. Title 22, Cal. Code Regs., Sections 66508(a)(1) and 67243(b) as replaced by Sections 66262.34(a)(1) and 66265.173(b).

LSSM violated Title 22, Cal. Code Regs., Sections 66508(a)(1) and 67243(b) as replaced by Sections 66262.34(a)(1) and 66265.173(b) in that they stored several open containers of hazardous waste in the generator areas of the facility.

On May 30, 1991, the following hazardous waste containers were observed open:

- One open 55-gallon metal drum of waste pump oil that was in the gas yard. This drum was totally unlabeled.

- One open 55-gallon polyethylene drum container about 1/2 full (antifreeze) of ethylene glycol was totally unlabeled. The container was labeled "degreaser."
- One open empty 5-gallon metal container of photo thin film hazardous waste.

4. Health and Safety Code (H&SC), Section 25201.

LSSM violated H&SC, Section 25201 in that on May 30, 1991, LSSM stored the following hazardous wastes for more than 90 days without a permit or authorization from the Department.

- One 55-gallon unlabeled metal drum containing about 30-40 gallons of pump waste oil was in the gas yard marked with the date April 23, 1990. This container was stored for 402 days in a generator area.
- One open and unlabeled 55-gallon polyethylene drum of ethylene glycol about 2/3 full dated August 2, 1990 was stored in the gas yard. This container was stored for 301 days which exceeds 90 days allowed for a generator area.

The gas yard was not under the control of the operator and was a central accumulation area for generated waste. Therefore the gas yard is not a satellite accumulation area.

5. Title 22, Cal. Code Regs., Sections 66508(a)(2) and/or (a)(3) and/or (c)(1) and/or (c)(2) and/or (c)(3) as replaced by Title 22, Cal. Code Regs., Section 66262.34.

LSSM failed to label 10 containers of hazardous waste, located in generator areas, with the required hazardous waste information.

On May 30, 1991, LSSM failed to label nine containers of hazardous waste in the gas yard with the following:

- One 30-gallon polyethylene container of anti-freeze did not have (i) composition and state of the waste (ii) statements which call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, corrosive, etc.) (iii) name and address of the generator.
- One open 55-gallon metal drum of waste pump oil that was in the gas yard. This drum was totally unlabeled.
- One 55-gallon metal drum of photoresist/mixed solvents whose label did not include (i) composition and physical state of the waste and (ii) name and address of the waste

generator.

- One 30-gallon metal drum container of trichloroethane (TCA), had no physical state, hazardous waste properties or name and address of generator. The container was labeled "Hazardous Waste" and marked TCA, in the gas yard.
- One 55-gallon metal drum container full of chlorobenzene, (i) was not labeled or marked clearly with the words, "Hazardous Waste" (ii) was not labeled with statement or statements which call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, etc.). (iii) did not have name and address of the generator waste.
- One open 55-gallon polyethylene drum container about 1/2 full (antifreeze) of ethylene glycol was totally unlabeled. The container was labeled "degreaser."
- One open empty 5-gallon metal container of photo thin film hazardous waste did not have (i) the date of accumulation, hazardous properties, physical state, or name and address of generator.
- One 5-gallon oily waste can in the photo-resist application laboratory in the satellite accumulation area, did not have (i) the date of accumulation (ii) the words "hazardous waste" marked on it, and (iii) the composition and physical state of the waste.

On September 30, 1992, LSSM failed to label one container located in Yellow Room #1 with the following information:

One 2-gallon container approximately half full of 1,1,1 trichloroethane and acetone waste with statements which call attention to the particular hazardous properties of the waste.

6. Interim Status Document (ISD), #CA 000625392, Section II 2(a) and/or 2(b) and/or 2(c) (1) (2) (3) (4).

On May 30, 1991 and September 30, 1992, LSSM failed to label a series of hazardous waste containers in the ISD drum storage area with the required hazardous waste information.

On May 30, 1991, the following unlabeled hazardous waste containers were observed:

- Four 55-gallon metal drums of mixed solvents (i) did not have or were not labeled clearly with the word, "Hazardous Waste", (ii) did not have the composition and physical state of the waste, (iii) did not have

statements which call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, explosive, etc.), (iv) did not have name and address of waste generator.

- Five mercury lamps in an open cardboard container did not have the date of accumulation, hazardous properties of the waste, name and address of the waste generator.
- One 55-gallon polyethylene drum hydrofluoric acid (HF) did not have (i) the words, "Hazardous Waste", (ii) the composition and physical state of the waste (iii) statements which call for attention to the particular hazardous properties of the waste, (iv) name and address of the waste generator.
- One 55-gallon metal drum, full of mixed solvents (mainly xylenes and photoresist) did not have (i) date of accumulation (ii) the words: "Hazardous Waste" (iii) composition and physical state of the waste (iv) hazardous properties (v) name and address of waste generator.
- One gallon of aurostrip did not have (i) date of accumulation (ii) the words, "Hazardous Waste," (iii) composition and physical state of the waste, (iv) statements which call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, explosive, etc.), (v) name and address of waste generator.
- Two polyethylene 1-gallon containers each full of potassium iodide etchant, one dated April 5, 1991, did not have (i) the words, "Hazardous Waste", (ii) hazardous properties (iii) name and address of waste generator, and one of these did not have the initial date of accumulation.
- One 5-gallon polyethylene of diode etchant, marked April 25, 1991, did not have particular hazardous properties of the waste.
- One open 30-gallon polyethylene drum of A-40 grade etchant stripper, with funnel on top, in bay 2 did not have (i) the words, "Hazardous Waste," marked on it, (ii) composition and physical state of the waste, (iii) hazardous properties of the waste and (iv) name and address of waste generator.
- One vacuum bag in an open cardboard box placed in a polyethylene 10-gallon tray in bay 4, did not have (i) initial date of accumulation marked on it (ii)

composition and physical state of the waste, (iii) hazardous properties of the waste and (iv) name and address of hazardous waste generator.

- One gallon glass bottle of waste acetone did not have (i) date of accumulation, (ii) the words, "Hazardous Waste", (iii) hazardous properties of the waste, (iv) name and address of generator.
- One polyethylene gallon container full of gold etch, in bay 2, did not have (i) composition and physical state of the waste, (ii) hazardous properties of the waste, and (iii) name and address of generator.
- One poly gallon container, dated April 25, 1991, did not have (i) description of contents, composition and physical state of the waste (ii) hazardous properties of the waste, and (iii) name and address of hazardous waste generator.
- One glass quart full of trinole etchant did not have (i) the description of contents, composition and physical state of the waste (ii) hazardous properties of the waste (e.g. flammable, reactive, explosive, etc.), (iii) name and address of waste generator.
- One polyethylene 20-gallon drum full of mixed solvent of bromine/methanol marked March 14, 1991 did not have (i) the words, "Hazardous Waste", (ii) statement or statements that call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, explosive, etc.), (iii) name and address of waste generator.
- Two 55-gallon metal drums both full of trichloroethylene/trichloroethane (TCE/TCA) in bay 3, did not have (i) accumulation date marked on them (ii) the words, "Hazardous Waste", (iii) the composition and physical state of the waste.
- Several metal bars of soldering flux placed in an open cardboard box in bays 3 and 4. This container did not have (i) the accumulation date marked on it, (ii) the composition and physical state of the waste, (iii) name and address of the waste generator.
- One gallon bottle container of cyanide, in bay 1 did not have (i) the words, "Hazardous Waste," (ii) hazardous properties of the waste, and (iii) name and address of waste generator.
- One quart bottle of PMA developer chemical, in Bay 1, did

not have (i) date of accumulation, (ii) composition and physical state of the waste, (iii) or statements which call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, explosive, etc.), and (iv) name and address of waste generator.

- One empty open white polyethylene 1-gallon container in Bay 1 contaminated inside with oily and grease spots did not have (i) date of accumulation marked on it (ii) the words, "Hazardous Waste," (iii) composition and physical state of the waste (iv) hazardous properties of the waste, and (v) name and address of waste generator.
- One full polyethylene gallon container of nicklex marked with accumulation date, April 25, 1991, did not have (i) composition and physical state of the waste, marked on it, (ii) hazardous properties of the waste and (iii) name and address of waste generator.
- One 55-gallon metal drum labeled as "Solid Poison", did not have (i) composition and physical state of the waste, marked on it, (ii) hazardous properties of the waste, and (iii) name and address of hazardous waste generator.

On September 30, 1992, the following unlabeled hazardous waste containers were observed:

One open 55-gallon black metal drum half full of rags contaminated with chlorobenzene did not have the following information on the container: (i) the date the 90-day accumulation period began, (ii) the words "Hazardous Waste," (iii) composition and physical state of the waste (iv) statements which call attention to the particular hazardous properties of the waste (e.g. flammable, reactive, corrosive, etc.), and (v) name and address of the generator. This drum was located in the ISD storage area.

7. Title 22, Cal. Code Regs., Section 66265.2.

LSSM violated Title 22, Cal. Code Regs., Section 66265.2 in that on September 30, 1992, it was discovered that they failed to submit to the Department a request for a change in the facility prior to modifying the ISD drum storage area in early 1992.

8. Title 22, Cal. Code Regs., Section 66389(b)(4) as replaced by Section 66270.72(a)(4); and/or ISD, Section I (1)(d).

LSSM failed to notify the Department of the change of ownership within 90 days prior to the scheduled effective date.

9. Title 22, Cal. Code Regs., Section 66481(a) as replaced by Section 66262.20(a).

LSSM violated Title 22, Cal. Code Regs., Section 66481(a) as replaced by Section 66262.20(a), in that on May 30, 1991 and October 2, 1992, they failed to include state generator's identification (ID) numbers on nine manifests.

On May 30, 1991, the following hazardous waste manifests did not include state generator's ID numbers: LA1145471, LA1145473, LA1145574 and LA1145506.

On October 2, 1992, the following hazardous waste manifests did not include state generator's ID numbers: LAA6046350, LAA6046303, LAA6046351, LAA6046302, and 88034952.

10. Title 22, Cal. Code Regs., Section 66265.16(c).

LSSM violated Title 22, Cal. Code Regs., Section 66265.16(c) in that on October 2, 1992, the training records showed that Mr. Don Bell, LSSM's current Facilities Manager, had not taken a hazardous waste training course since May 17, 1988.

11. Title 22, Cal. Code Regs., Sections 67105 (a), (d) and (e) as replaced by Sections 66265.16(a), (d) and (e); and ISD, Section III(6)(a), (d) and (e).

LSSM violated Title 22, Section 67105(a), (d) and (e) and their ISD, Section III(6)(a), (d) and (e) in that on May 30, 1991 and October 2, 1992, they failed to provide an adequate training program, maintain training documents, and to keep training records for at least three years.

On May 30, 1991, LSSM failed to provide a program the facility uses to train its hazardous waste management staff that teaches them to perform their duties in a manner that ensures the facility's compliance with the conditions of both Title 22, Section 67105(a), (d) and (e) and those of their ISD.

On October 2, 1992, LSSM failed to provide a written job description for Mr. Sonny Placido who handles hazardous waste on a routine basis and failed to provide a written description of the type and amount of continuing training classes which will be given to any employee handling hazardous waste.

12. Title 22, Cal. Code Regs., Section 66265.52(d) and (e).

LSSM violated Title 22, Section 66265.52(d) and (e) in that on or about October 2, 1992, they failed to provide a contingency plan with a list of updated emergency coordinators and an updated list of the locations of all emergency equipment at the facility and a brief outline of the equipment

capabilities.

13. Title 22, Cal. Code Regs., Section 66265.54(d).

LSSM violated Title 22, Section 66265.54(d) in that on October 2, 1992, they failed to amend the contingency plan when a new emergency coordinator was assigned several months ago.

14. Title 22, Cal. Code Regs., Section 66265.142.(b).

LSSM violated Title 22, Section 66265.142.(b) in that on October 2, 1992, they failed to adjust the closure cost estimates for inflation on an annual basis.

15. Title 22, Cal. Code Regs., Section 67102(a)(1)(2)(3), (b)(1)(2)(3), (c)(1) as replaced by Title 22, Cal. Code Regs., Section 66265.13; and ISD, Section III, 3(a)(1)(2)(3), (b).

On May 30, 1991, LSSM failed to provide a waste analysis plan and on October 2, 1992, they failed to provide an adequate waste analysis plan.

On October 2, 1992, the waste analysis plan which Mr. Bell made available did not specify the sampling management methods which would be used to obtain a representative sample of the waste to be analyzed.

16. Title 22, Cal. Code Regs., Section 66471(a)(1)(2) as replaced by Section 66262.11.

LSSM violated Title 22, Cal. Code Regs., Section 66471(a)(1)(2) in that on or about May 30, 1991, they failed to provide a written waste analysis plan that its waste management staff could use to manage the facility's hazardous waste or make a hazardous waste determination of the identity or nature of the waste located in the gas yard.

LSSM did not provide a written waste analysis plan that its waste management staff use to manage the facility's hazardous waste.

17. Title 22, Cal. Code Regs., Sections 67379 and 67163(a)(b) as replaced by Sections 66262.40 and 66265.73(a)(b); and ISD, Section IV 1 and 2.

LSSM violated both Title 22, Sections 67379 and 67163(a)(b), and ISD, Section 1 and 2 in that on or about May 30, 1991, the Respondent failed to keep written operating records at the facility.

18. Title 22, Cal. Code Regs., Section 67244 as replaced by

Section 66265.174; and ISD, Section VII 3(a)(1)(2)(3)(4).

LSSM violated both Title 22, Cal. Code Regs., Section 67244 and ISD, Section VII 3(a)(1)(2)(3)(4) in that on or about May 30, 1991, the Respondent failed to inspect the facility on a daily and weekly basis.

The elementary neutralization unit which is under ISD is required to be inspected daily. The drum/container storage area, also under ISD is required to be inspected on a weekly basis. LSSM failed to do this in either case.

Within 30 days upon receipt of this Report, LSSM shall submit documentation that all the above violations have been corrected in accordance with hazardous waste found in Title 22, California Code of Regulations.

The Department may reinspect Litton Solid State Microwave to verify compliance. The issuance of this Report of Violations does not preclude the Department from taking administrative, civil or criminal action as a result of the violations noted herein.

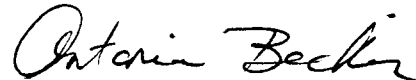
If you have any questions regarding this Report of Violations, please contact Pat Payne at (510) 540-3872.

Sincerely,



Kwiyukwa Madoshi

Associate Hazardous Materials
Specialist
Surveillance & Enforcement



Antonia Becker
Associate Hazardous Materials
Specialist
Surveillance & Enforcement



Rick Robison
Unit Chief
Surveillance & Enforcement
Region 2

Cert. Mail P 659 118 435

cc: Mr. Don Bell
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U.S. Environmental Protection Agency, Region IX
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DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL DIVISION
2151 BERKELEY WAY, ANNEX 7
BERKELEY, CA 94704

21 SEP 1989



INSPECTION REPORT

Varian Associates, Inc.
Solid State, Microwave Division
3251 Olcott Street
Santa Clara, CA 95054

EPA ID No. CAT000625392

Inspected By: Richard Wheeler, AHMSDate of Inspection: July 25, 1989Date of Report: 8/24/89I. Purpose:

Non-major, Interim Status, Focused TSD Facility Inspection, Land Ban Inspection and Hazardous Waste Generator Inspection.

II. Representatives Present:

Varian, Inc., Solid State, Microwave Division:
Denny Baker, Facilities Manager
Gary R. Kern, Environmental Engineer

DHS/TSCD:
Richard Wheeler, Assoc. Hazardous Materials Specialist

III. Owner/Operator:

Varian Associates, Inc., Solid State Microwave Division (Varian) is a division of Varian Associates, Inc. which is a Delaware Corporation. The personnel directly responsible for hazardous waste management at this facility in Santa Clara, California is Denny Baker, Facilities Manager.

IV. Background:

According to the Toxic Substances Control Division (TSCD) files, Varian Associates, Inc., Solid State, Microwave Division (Varian) submitted a Part A application on November 11, 1980. An ISD was issued on March 30, 1981 for storage in containers and treatment in tanks.

On April 15, 1983, a letter from Varian requesting variance from the hazardous waste facility permit requirements for storage in containers and for the elementary neutralization treatment unit was received by DHS.

On May 6, 1983, the Department of Health Services (DHS) received another letter from Varian requesting reclassification of their interim status document to a generator-only status because the facility was not storing hazardous waste longer than 90 days and because the facility was not treating hazardous waste, except for elementary acid neutralization.

On March 30, 1984, a generator and variance inspection was conducted by DHS and the management was notified regarding the need of a leak detection system for the elementary acid neutralization unit to meet state requirements for obtaining a variance.

On May 11, 1984, DHS denied the facility's request for variance from hazardous waste facility permit requirements on the neutralization unit. The denial was based on a concern regarding the possible leakage of hazardous waste from the sumps used for neutralization of the acid wastewater which could contaminate surrounding soils and groundwater. However, the facility was granted generator status for the storage of hazardous waste in containers (drums).

On May 23, 1985, Varian notified DHS by letter of a leak in the 400-gallon acid wastewater sump on May 5, 1985. The leak was promptly contained and an estimated 20 gallons of wastewater escaped. Wastewater analyses were performed and the facility believed that the 20 gallons had no effect on the environment. The acid wastewater sump was reconditioned and upgraded at that time.

During the 1987 inspection, Dennis Baker stated that in 1985, Varian removed an existing neutralization tank and replaced it with a new one. A new holding tank was also installed in 1985.

On January 27, 1986, the facility reapplied for a variance on the neutralization unit. The variance

application is presently being reviewed by the Department's permitting unit.

V. General Description of Facility:

The facility is located on about 10 acres in the San Tomas Business Park of Santa Clara, California which is zoned for commercial/industrial use. The property is bounded on the North side by the Bayshore Freeway and on the East side by the San Tomas Expressway.

The facility treats approximately 1,570 gallons of wastewater a day in an acid neutralization unit.

There is also a drum storage area at the facility which has a capacity to hold a maximum of 20 fifty-five gallon drums.

Varian designs, builds, markets and services high technology products. These products include electron tubes, solid state devices, vacuum components and electronic devices based on vacuum technology, analytical methods, medical procedures and magnetic components.

VI. Hazardous Waste Activity Description:

Varian Associates, Inc., Solid State Microwave Division designs, builds, markets and services high technology products for customers in industry, communications, defense, science, and medicine. Products include electron tubes, solid state devices, vacuum components, and systems based on vacuum technology, analytical methods, medical procedures and magnetic components.

Hazardous wastes generated from semiconductor manufacturing processes are flammables, corrosives, poisons, and halogenated wastes. These wastes are sent off-site for disposal, treatment or recycling in compliance with all hazardous waste regulations.

Wastewaters for the acid neutralization (treatment) unit include waste/spent nitric acid, sulfuric acid, hydrochloric acid and aqua regia solutions with deionized water. These wastewaters are gravity fed into the acid collection sump through pipelines coming from various work stations and the semiconductor overflow drain.

Elementary Acid Neutralization (Treatment) Unit

The elementary acid neutralization (treatment) unit measures 3x6x12 feet along with a transfer sump which is round and measures 4 feet deep and 5 feet in diameter. The treated wastewater is discharged into the San Jose/Santa Clara Water Pollution Control Plant.

Rinse waters containing solutions of hydrochloric acid, nitric acid, sulfuric acid, phosphoric acid, sodium hydroxide, hydrogen peroxide, ammonium hydroxide, and small amounts of nickel, bromine, fluorine, gold and silver are treated in the acid wastewater neutralization unit. Processes creating the waste include: cleaning, etching, plating, developing and other operations done on a small scale as part of production of solid state oscillators, amplifiers, YIG tuned devices, and microwave semiconductors.

Wastewaters from process areas are gravity fed into either the transfer sump or the neutralization tank. Wastes collected in the transfer sump are pumped into the neutralization tank by pumps which are controlled by float switches. The tank also has a high level alarm. Wastes treated in the neutralization tank first enter a holding tank which equalizes the flow. Then the water enters a mixing tank where the pH is neutralized via a caustic soda injection which is monitored by a pH probe. A pH of between 5 and 10.5 is maintained in the outflow as required by city ordinance. The tank is mounted in the ground and is surrounded by asphalt. Tanks and piping are made of polypropylene which is highly resistant to acid solutions. Pipes are fuse sealed where joined together.

Drum Storage Area

The drum storage area is a locked, fenced area of asphalt pavement and has two concrete diked areas recessed into the ground and painted with an epoxy paint. The dimensions are 20x20 feet. An asphalt berm surrounds the entire area as a tertiary containment. The barrels are on wooden pallets to raise them above any rain water which may collect in the dikes. This rainwater is sampled and pumped out before it reaches the drum bases.

Equipment such as a safety shower, eyewash and fire extinguisher are inspected and maintained within the

area. The area is locked at all times and only three keys are issued for the area. All operations are controlled by the environmental coordinator. The area will hold a maximum of 20 fifty-five gallon drums, and is used to hold much smaller containers which are shipped out within 90 days of their collection.

The areas are divided up to separate acids, poisons, flammables, and halogenated wastes. This is accomplished by sectioning within the concrete dikes.

The collected waste is placed in containers of a compatible material, i.e., acids in polypropylene, xylene in metal containers, etc. The materials are collected in the type of containers with which they are known to be compatible. These waste containers which are numbered are collected each Wednesday from the satellite accumulation stations on a cart and brought to the waste yard and placed in designated barrels. The waste is collected by people who are very well informed on compatibles and the segregation of such chemicals as a part of their routine training. The waste is supervised by the environmental coordinator. The facility has a system for collection, segregation, and verification of such wastes within the facility.

Safety equipment is stored in the waste yard (respirators, goggles, gloves, absorbent materials). The self-contained breathing apparatus and spill cart is within 25 feet of the waste yard. There is a separate alarm system for the waste yard and a PA system to communicate with the waste handler.

VII. Violations:

1. Health and Safety Code (H&SC), Section 25123.3(d)(4).

Varian violated H&SC, Section 25123.3(d)(4), in that on or about July 25 Varian failed to label containers at their satellite accumulation stations with the words Hazardous Waste and the initial date of accumulation .

At the facility's satellite accumulation stations (Photos #1 and #2, Attachment #4) I observed that the facility had not labeled hazardous waste containers with the words hazardous waste or with the initial date of accumulation of the hazardous waste.

VIII. Observations:

The following observations were made during the inspection of Varian on July 25, 1989.

Upon arrival at the facility I was questioned about my citizenship, given a visitor's badge and announced to Mr. Baker.

Mr. Baker came out to the reception area to get me. We went to his office where I met Mr. Kern. During the meeting, the purpose of my inspection was discussed. Mr. Baker described the facility's operation (see General Description of Facility and Hazardous Waste Activity Description).

Following the initial interview, I made a limited record review to confirm continued compliance. I especially reviewed the current Biennial Report, Closure Plan, Training Plan, Contingency Plan, Manifests and Inspection Schedules. I found all of these items to be in compliance.

I then made a complete walk-through of the facility with special emphasis on the hazardous waste management area.

I inspected and photographed the Elementary Acid Neutralization (Treatment) Unit, the Drum Storage Area and the Satellite Accumulation Areas.

Everything was in order and no violations were observed except that Mr. Baker was not aware that the Satellite Accumulation containers must be labeled as "Hazardous Waste" although they were labeled as "Waste". Also, they were not marked with an initial accumulation date although there was a clipboard log at the site to log in dates of deposits/accumulations.

I explained to Mr. Baker and Mr. Kern that the containers must be labeled "hazardous waste" or other words that identify the contents of the container and with an initial accumulation date on the container.

IX. Sampling Summary:


No samples of hazardous waste were taken.

X. Discussion with Management:

The above cited violation was discussed with Mr. Baker and Mr. Kern who made no comments about the violation; however, he stated that the facility would correct the violation and achieve compliance as soon as possible.

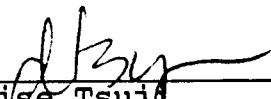
XI. Attachments:

1. Focused CEI Checklist - 18 pp.
2. Land Ban Generator Checklist and Report - 11 pp.
3. Generator CEI Checklist - 14 pp.
4. Financial Responsibility Evaluation Memo - 1 p.
5. Photographs - 5 pp.



Richard A. Wheeler
Associate Hazardous Materials Specialist

8/24/89
Date Submitted



Denise Tsuji
Senior Hazardous Materials Specialist

8/29/89
Date Approved

DT:RW:jdm(38)

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL DIVISION
2151 BERKELEY WAY, ANNEX 7
BERKELEY, CA 94704

Varian

LAND BAN GENERATOR INSPECTION REPORT

EPA ID#: CAT 000 625 392

Facility Name: *Varian Associates, Inc., Solid State, Microwave Div.*Facility Location: *3251 Olcott St., Santa Clara, CA 95050*Inspected By: *Richard Wheeler*Date of Inspection: *July 25, 1989*

Background: This inspection was conducted as part of the Department's RCRA grant workplan commitment, and was intended to assess the facility's compliance with the federal requirements contained in 40 CFR Part 268.

Persons Present:

*Denny Baker, Manager**Gary Kearn, Engineer*

Sr. HMS/Sr. WME _____ DATE of REPORT _____

Attachment #2

Land Disposal Restrictions
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
Did the facility handle any waste restricted from land disposal* since its effective prohibition date: 268.1(b) (See attached listings)			
F001 thru F005 spent solvents?	✓	—	
F020-23 and F026-28 Dioxins?	—	✓	
"California List" wastes?	✓	—	
First Third scheduled wastes?	✓	—	

Exemptions: Are the prohibited wastes exempted from land disposal restrictions because:

The waste is from conditionally-exempt small quantity generators? 268.1(c)(3)(all)	—	✓	
A farmer is disposing of waste pesticides in accordance with 262.70? 268.1(c)(4)	—	✓	
An "imminent endangerment" waiver has been granted under 121(d)(4) of CERCLA? 268.1(d)	—	✓	?

If no restricted wastes were handled after the effective dates or an above exemption applies to all restricted wastes handled, do not complete remainder of this section.

Exceptions: Can the restricted wastes continue to be land disposed because:

A case-by case extension has been granted under Subpart C or 268.5, for the wastes handled? 268.1(c)(1)(all), 268.30(d)(3)(F001-5), 268.31(d)(3)(dioxins), 268.32(g)(2)(CA list), 268.33(e)(3)(1st 3rd)	—	—	N/A
A no-migration petition has been granted under 268.6, for the wastes and units involved? (See 40 CFR 268.6(e-f) for operating requirements.) 268.1(c)(2)(all), 268.30(d)(2)(F001-5), 268.31(d)(2)(dioxins), 268.32(g)(1)(CA list), 268.33(e)(2)(1st 3rd)	—	—	
An exemption has been granted because the waste is certified treated by the best demonstrated available technology (BDAT)? 268.44(a)	—	—	↓

* Land disposal means placement in or on the land, including a landfill, surface impoundment, waste pile, land treatment facility, salt dome formation, underground mine or cave, injection well, or placement in a concrete vault or bunker for disposal. 268.2(a) Injection wells are being covered under a separate schedule.

Land Disposal Restrictions - Continued
(Part 268)

Yes No Comments

A generator certifies a good-faith effort in compliance with 268.8 "soft-hammer" regulations? 268.1(c)(5)

✓

If any of the preceding exceptions apply, the attached effective 268 Subpart C dates and concentrations, Subpart D standards, and Subpart E storage restrictions do not apply. Waste analysis and applicable generator certification requirements still pertain.

Has the handler not merely diluted the restricted waste or treatment residue in order to achieve compliance? 268.3

✓

Storage:

Are restricted wastes only being stored where: 268.50-

(a)(1) A generator is using tanks or containers while accumulating a sufficiently large batch to properly recover, treat, or dispose?

✓

(a)(2) A TSD is accumulating a batch as above? and:

(i) Each container is marked with the contents and accumulation start date?

N/A

(ii) Each tank is marked with the contents, accumulation start date, quantity of H.W., and/or the information is in the operating record?

(c) The TSD can prove that any storage over one year was solely for the purpose of necessary accumulation? or:

(d) The wastes are subject to an approved no-migration petition, case-by-case extension, a nation-wide variance, or a valid "soft hammer" 268.8 certification?

(e) The stored wastes already meet any applicable treatment, concentration, or waiver standards?

(f) After 7/8/87, are liquid hazardous wastes over 50 ppm PCBs stored for less than a year, and in a 761.65(b) (TSCA) complying storage area?

Land Disposal Restrictions - Continued
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
<u>Generators: Waste Analysis</u>			
If restricted wastes are generated on-site, has the generator, using knowledge or analysis, determined if the waste is restricted from land disposal? 268.7(a)	✓	—	_____
Was the Paint Filter Liquids Test used to determine if waste sludges and solids were CA list liquids? 268.32(i)	—	—	N/A
Did the generator determine if liquid CA list wastes have a pH of less than or equal to 2? 268.32(j)(1)	✓	—	_____
Did the generator determine if liquid CA list wastes containing PCBs or HOCs were prohibited? 268.32(j)(2)	✓	—	No PCBs
Where waste treatment standards are expressed as concentrations in the waste extract (268.41), did any analysis include the TCLP (268 Appendix I)? 268.33(g)	—	—	N/A no waste extracts
<u>Toxicity Characteristic Leachate Procedure</u>			
Notices, Certifications, and Demonstrations:			
If determined that the waste is <u>restricted and requires treatment</u> before land disposal, have they notified the treatment or storage facility with each shipment of waste? including: 268.7(a)(1)-	✓	—	_____
(i) EPA H.W. number?	✓	—	_____
(ii) Appropriate treatment standards and prohibitions?	✓	—	_____
(iii) Manifest # for the waste?	✓	—	_____
(iv) Available waste analysis data?	✓	—	_____
If the waste is determined to be <u>restricted but not require further treatment</u> , has the generator submitted with each shipment to the treatment, storage or land disposal facility, a notice and a certification that the waste meets both treatment standards and applicable prohibitions? 268.7(a)(2)	—	—	N/A will comply if occurs in future
Did the notification include: 268.7(a)(2)(i)-			
(A) EPA H.W. number?	—	—	_____
(B) Appropriate treatment standards and prohibitions?	—	—	_____
(C) Manifest # for the waste?	—	—	_____
(D) Available waste analysis data?	—	—	✓

Land Disposal Restrictions - Continued
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
Was the following certification signed: 268.7(a)(2)(ii)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	?

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

If the generator's waste is <u>subject to a national variance, an extension or an exemption</u> , have they notified the receiving facility with each shipment of waste that the waste is not prohibited from land disposal? 268.7(a)(3)	—	—	N/A
--	---	---	-----

Did the notice include: 268.7(a)(3)-	—	—	
(i) EPA H.W. number?	—	—	
(ii) Appropriate treatment standards and prohibitions?	—	—	
(iii) Manifest # for the waste?	—	—	
(iv) Available waste analysis data?	—	—	
(v) The date the waste is subject to prohibitions?	—	—	

If determined that the waste is a <u>First Third waste without treatment standards</u> and not a CA list waste (and thus a "soft hammer" waste), have they notified the receiving facility with each shipment? including: 268.7(a)(4)-	—	—	
(i) EPA H.W. number?	<input checked="" type="checkbox"/>	—	

(ii) Appropriate certifications and the restrictions under 268.33(f) for "soft hammer" wastes?	<input checked="" type="checkbox"/>	—	
(iii) Manifest # for the waste?	<input checked="" type="checkbox"/>	—	
(iv) Available waste analysis data?	<input checked="" type="checkbox"/>	—	

If determined that the waste is restricted based solely on knowledge, is all supporting data used in the determination maintained on-site in the generator's files? 268.7(a)(5)	—	—	
	<input checked="" type="checkbox"/>	—	

Has the generator retained on-site a copy of all notices, certifications, waste analysis data, and other Part 268 records for at least five years? 268.7(a)(6)	—	—	
	<input checked="" type="checkbox"/>	—	

NOTE: If the recipient of the generator's waste is not on the attached list (p. 11) of known land ban facilities, or if an off-site shipment without notification has occurred, indicate the accepting TSD facility on p. 11 for proper follow-up.

Land Disposal Restrictions - Continued
(Part 268)

Yes No Comments

~~Generators of First Third "soft hammer" wastes (268.33(f)) shipped for land disposal:~~

Prior to shipment for land disposal, has the generator certified and submitted to the R.A. a demonstration of a good faith effort to locate and contract ~~with treatment~~ ~~recovery facilities~~ for the practically available treatment which provides the greatest environmental benefit?

268.8(a)(1-2)

✓

Did the demonstration include a list of facilities and representatives contacted, complete with addresses, phone numbers, and contact dates? 268.8(a)(2)

✓

Knew that Rollins was an incinerator and Plennis was a solvent recycler.

Was a copy of the ~~demonstration~~ to the receiving facility with the ~~manifest~~ and the ~~manifest~~ of waste?

268.8(a)(3) or -(4)

✓

Are copies of the demonstration and certification kept on site for ~~at least five~~ years? 268.8(a)(3) or -(4)

✓

If the generator determined there is no practical treatment for his waste, did the demonstration include a written discussion and the following certification?
268.8(a)(2)(i)

N/A

I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

If the generator determines that there are practical treatments for the waste, did they contract to use the technology that they demonstrated yields the greatest environmental benefits? 268.8(a)(2)(ii)

✓

Did they include the following certification? 268.8(a)(2)(ii)

✓

I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology that yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Land Disposal Restrictions - Continued
(Part 268)

Yes No Comments

Has the generator immediately notified the R.A. of any changes in the conditions on which the certification was based? 268.8(b)(1)

☒

☐

N/A

If the R.A. invalidated a certification, has the generator immediately ceased shipments of the wastes, informed all facilities that received the waste, and retain records of the communication on-site in their files? 268.8(b)(3)

☒

☐

N/A

Land Disposal Restrictions - Continued
(Part 268)

Yes No Comments

Treatment Facilities: Waste Analysis

Has the facility tested their wastes as specified in their waste analysis plan (265.13)? 268.7(b)

N/A

Where treatment standards are expressed as concentrations in the waste extract (268.41), has the facility tested the treatment residues or extract (using the TCLP, 268 Appendix I) to assure they met the applicable treatment standards? 268.7(b)(1)

For CA list-only wastes, were the applicable 268.32 Paint Filter Liquids Test, pH test, HOCs, and PCB tests performed? 268.7(b)(2)

For wastes with treatment standards expressed as concentrations in the waste (268.43), was the treatment residue, not an extract, tested? 268.7(b)(3)

Notifications and certifications:

Has the treater submitted with each shipment to the land disposal facility, a notice including: 268.7(b)(4)

- (i) EPA H.W. number?
- (ii) Corresponding treatment standard?
- (iii) Manifest # for the waste?
- (iv) Available waste analysis data?

Has the treatment facility submitted a signed certification with each shipment of waste or treatment residue to the land disposal facility stating that the treatment standards in 268 Subpart D were met? 268.7(b)(5)

For wastes with treatment standards listed as concentrations (268.41 or -.43) did the certification read: 268.7(b)(5)(i)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operations of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to achieve the performance levels specified in 40 CFR Part 268 Subpart D without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Land Disposal Restrictions - Continued
(Part 268)

Yes No Comments

For wastes with treatment standards listed as technologies (268.42) did the certification read: 268.7(b)(5)(ii)

N/A

I certify under penalty of law that waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Treatment and Off-site Storage facilities:

Where waste or treatment residues are sent off-site for further management, did the sender comply with the notification and certification requirements as the generator of the waste? 268.7(b)(6-7)

N/A

Where First Third "soft hammer" wastes are treated or stored, has a copy of the generator's valid certification and demonstration been retained? 268.8(c) and:

Has the treater or storer forwarded copies of the generator's certification and demonstration (if applicable) to the facility receiving the waste or treatment residues? 268.8(c)(2) and:

Has the treatment or recovery facility certified as follows with each shipment of waste that he has treated the waste in accordance with the generator's demonstration? 268.8(c)(1)


I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operations of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Land Disposal Restrictions - Continued
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
Treatment in surface impoundments exemption:			
If wastes otherwise prohibited from land disposal are treated in surface impoundments, has the facility met the following conditions: 268.4(a)			
(1) Treated, not just stored, the wastes in the impoundment?	---	---	N/A
(2)(i) Analyzed all treatment residues (sludge and supernatant separately) to determine if they meet treatment and/or prohibition standards?	---	---	<div style="border-left: 1px solid black; height: 100%; width: 1px; margin: 0 auto;"></div>
(2)(ii) Removed annually all treatment residues (including liquids) that do not meet treatment or prohibition standards?*	---	---	
(2)(iii) Not placed the residues in another impoundment for subsequent management?*	---	---	
Has the facility certified that all impoundments used to treat restricted wastes meet design requirements (265.221(a)) and that the facility is in compliance with GW monitoring (265 Subpart F) requirements? 268.4(a)(3-4)	---	---	
Is there a principal means of treatment other than evaporation of H.W. constituents? 268.4(b)	---	---	
Does the waste analysis plan include the procedures and schedule for: 268.4(a)(2)(iv); 265.13(b)(7)-	---	---	
(i) Sampling the impoundment contents?	---	---	
(ii) The analysis of test data?	---	---	
(iii) The annual removal of residues which exhibit a H.W. characteristic, and:	---	---	
(A) Fail 268 Subpart D treatment standards? or:	---	---	
(B) Where no treatment standards have been established, such residues are prohibited from land disposal under:	---	---	
(1) 268.32 (CA list) or RCRA 3004(d)?	---	---	<div style="border-left: 1px solid black; height: 100%; width: 1px; margin: 0 auto;"></div>
(2) 268.33(f) (1st 3rd)?	---	---	

* Unless the wastes have a valid "good faith" certification under 268.8. If the annual flow through the impoundments is greater than the combined volume of the impoundments, the supernatant is considered removed.

Land Disposal Restrictions - Continued
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
Land Disposal Facilities:			
Does the facility have copies of all notices, certifications, and applicable demonstrations? 268.7(c)(1) (See also 265.73, Operating Record)	<u> </u>	<u> </u>	<u>N/A</u>
Has the facility tested the waste, or an extract of the waste or treatment residue (using the TCLP, 268 Appendix I) to assure that the wastes or residues are in compliance with land disposal restrictions? 268.7(c)(2)	<u> </u>	<u> </u>	
Was the testing performed according to the frequency specified in the waste analysis plan? 268.7(c)(2)	<u> </u>	<u> </u>	
Where First Third "soft hammer" (268.33(f)) or CA waste liquid (268.32) wastes are disposed, did the facility: 268.7(c)(3), 268.8(d)	<u> </u>	<u> </u>	
Ensure the required certification (268.8) was received prior to disposal? and:	<u> </u>	<u> </u>	
That the disposal unit was in compliance with the "minimum technology" requirements of 40 CFR 268.5(h)(2)?	<u> </u>	<u> </u>	

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Varian, Inc., Solid State Microwave Div.

Inspection Photographs

July 25, 1989

Richard A. Wheeler, AHMS

Photo #1.

Satellite accumulation
station (Etching Lab)
where containers are not
labeled properly or
properly dated.

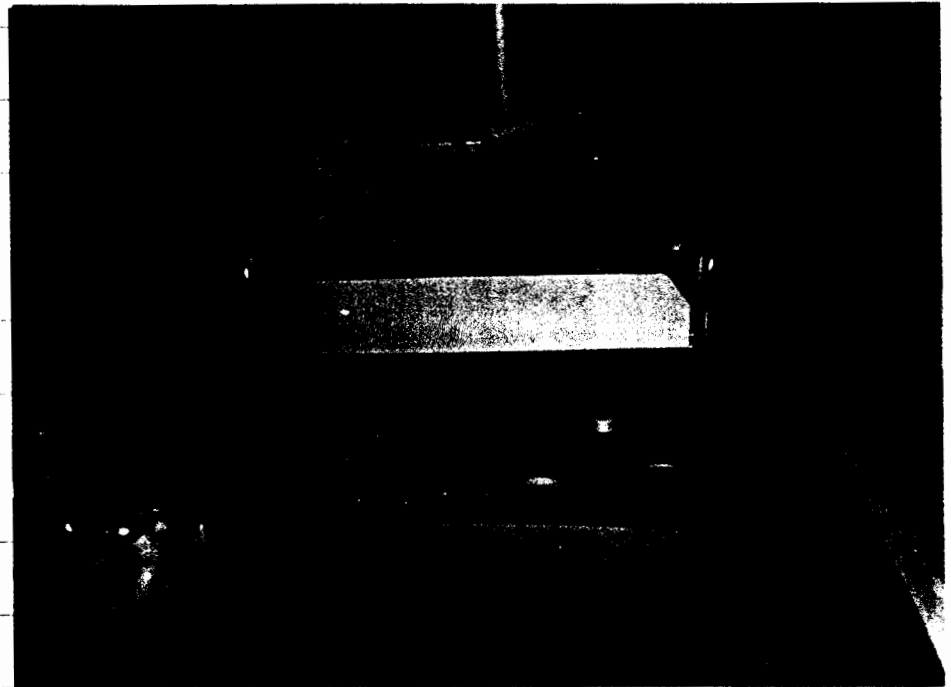
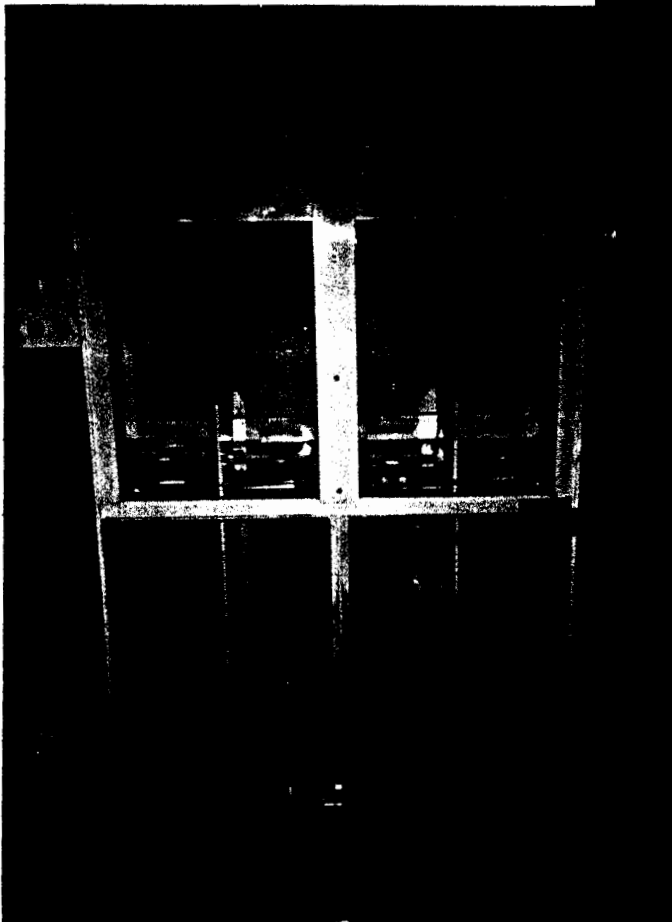


Photo #2.

Another satellite accumulation
station (MMWP Lab) where
containers are not labeled
properly or properly dated.



Attachment #5

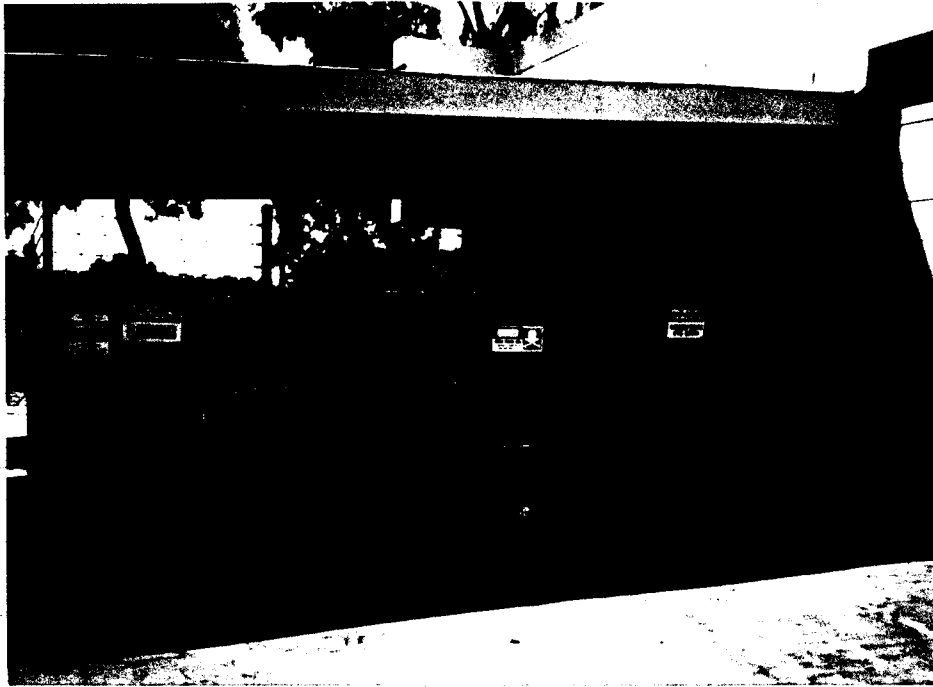


Photo #3. Showing drum storage area,
required signs + security fence.



Photo #4. Showing drum storage area with
secondary containment and
adequate aisle space.



Photo #5. Showing properly labeled drums, containers, safety signs, secondary containment, and security fence.

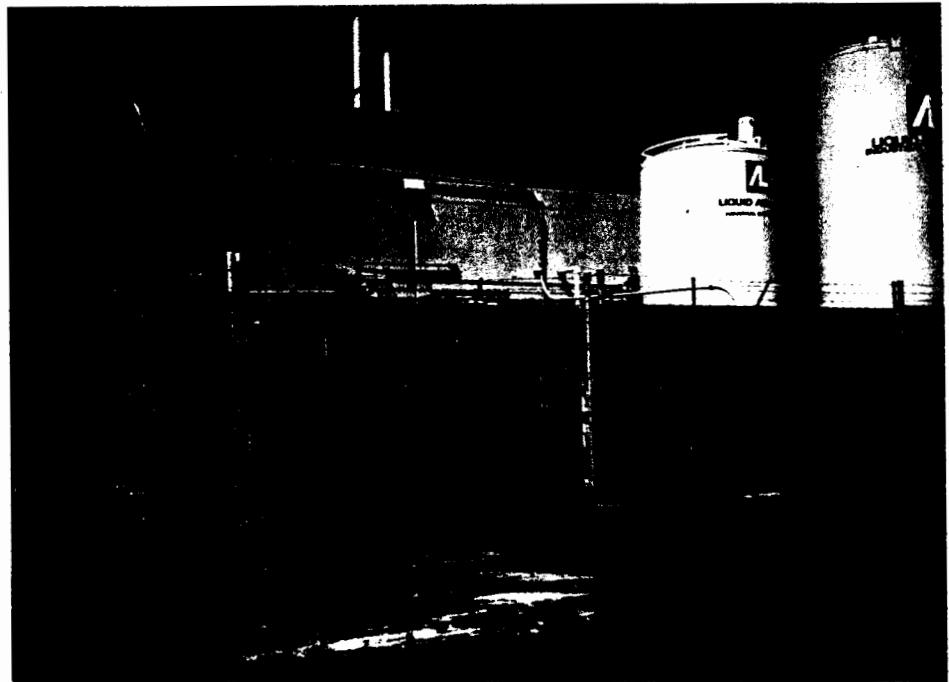


Photo #6. Showing security fence and warning signs for the hazardous waste treatment (elementary neutralization) area.



Photo #7. Additional drum storage within the Hazardous Waste Treatment Area secured by locked gate, cyclone fence & secondary containment.

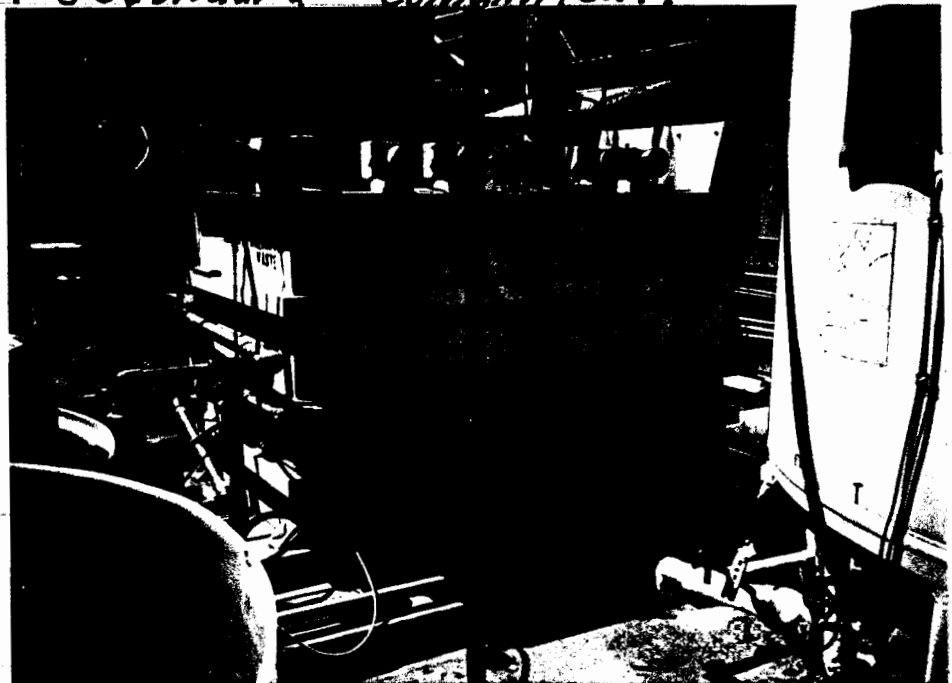


Photo #8. Showing the Hazardous Waste Treatment Tank (Elementary Neutralization) with flow, mixing & overflow controls.

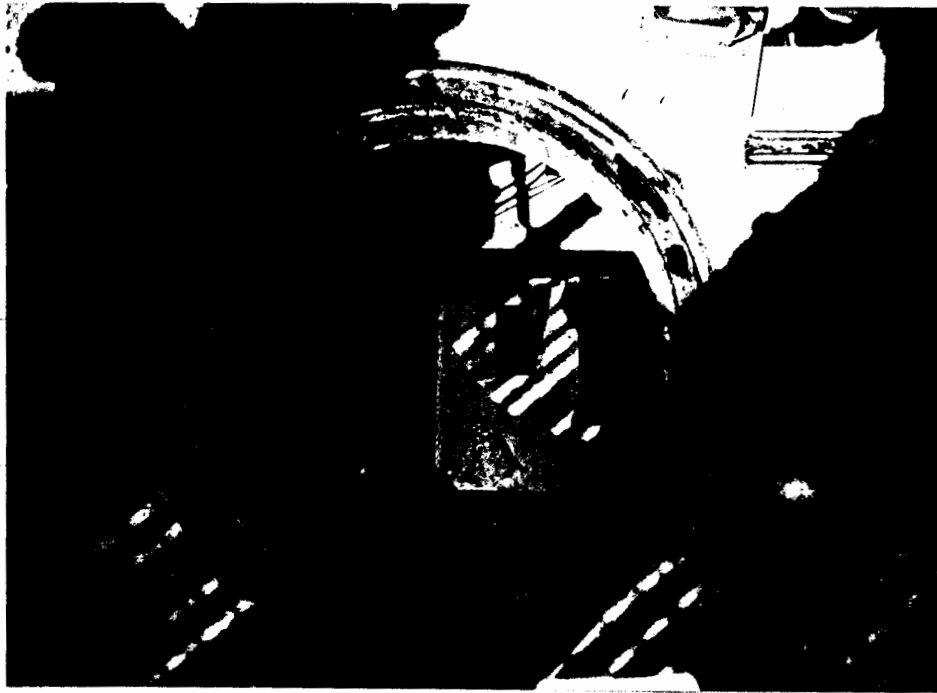


Photo #9. Showing sump under the HW Treatment Tank used for secondary containment.



Photo #10. Showing surge tank used for temporary storage of HW when Treatment Tank is full.

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Cal/EPA

Department of
Toxic Substances
Control

700 Heinz Avenue
Suite 200
Berkeley, CA
94710-2737

August 22, 1997



Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

Mr. Mark Pettigrew
Litton Industries, Inc.
1 Gatehall Drive
Parsippany, New Jersey 07054

Dear Mr. Pettigrew:

**CLOSURE CERTIFICATION APPROVAL FOR LITTON SYSTEMS,
INC., SOLID STATE DIVISION, 3251 OLCOTT STREET, SANTA
CLARA, EPA ID NO. CAT 000 625 392**

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), has received the closure certification report dated June 3, 1997 for Litton Systems Inc., Solid State Division at 3251 Olcott Street in Santa Clara. This report certifies that the closure of the drum storage area was performed in accordance with the Closure Plan approved on February 14, 1997.

We approve your closure certification report and now consider the unit at Litton to be officially closed. The Interim Status Document for the subject facility is no longer in effect.

This acknowledgment of facility closure does not remove any liabilities associated with past hazardous waste management practices which may have occurred at the site.

If you have any questions, please contact David Tao of my staff at (510) 540-3934.

Sincerely,

For James M. Pappas, P.E., Chief
Northern California Permitting
Branch

cc: See Next Page



Mr. Mark Pettigrew

August 22, 1997

Page 2

cc: Mr. Kenneth L. McLeod
Vice President Finance & Administration
Litton Solid State Division
3251 Olcott Street
Santa Clara, California 95054-3095

Mr. John McCarroll
U.S. EPA, Region IX, H-3
75 Hawthorne Street
San Francisco, California 94105

Mr. David Tao
Northern California Branch
Permitting Division
700 Heinz Avenue, Suite 200
Berkeley, California 94710



Cal/EPA

Department of
Toxic Substances
Control

700 Heinz Avenue
Suite 200
Berkeley, CA
94710-2737

February 14, 1997



Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

Mr. Mark Pettigrew
Litton Industries, Inc.
1 Gatehall Drive
Parsippany, New Jersey 07054

Dear Mr. Pettigrew:

**CLOSURE PLAN APPROVAL FOR LITTON SOLID STATE, 3251
OLCOTT STREET, SANTA CLARA, EPA ID NO. CAT 000 624 392**

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), has reviewed the Closure Plan dated October 18, 1996 for Litton Solid State at 3251 Olcott Street in Santa Clara. This plan was public noticed in the San Jose Mercury News from January 2, 1997 to February 3, 1997. No comments were received from the public. Pursuant to Title 22, California Code of Regulations, section 66265.112, your closure plan is hereby approved. You are required to comply with the specific activities proposed in the approved closure plan. Please note that upon completion of closure, you and an independent registered professional engineer must certify that closure was conducted in accordance with the approved plan.

If you have any questions, please contact David Tao of my staff at (510) 540-3934.

Sincerely,

James M. Pappas, P.E., Chief
Northern California Permitting
Branch

cc: see next page

Mr. Mark Pettigrew
February 14, 1997
Page Two

cc: Mr. Kenneth L. McLeod
Vice President Finance & Administration
Litton Solid State Division
3251 Olcott Street
Santa Clara, California 95054-3095

Mr. Chris Jones
Holmes & Narver, Inc.
999 Town & Country Road
Orange, California 92668

Mr. John McCarroll
U.S. EPA, Region IX, H-3
75 Hawthorne Street
San Francisco, California 94105

Mr. David Tao
Northern California Branch
Permitting Division
700 Heinz Avenue, Suite 200
Berkeley, California 94710

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EPI PA REVIEW ROUTE SLIP

Date

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number,
building, Agency/Post)

Initials

Date

1. Section Chief -review

2. Lindsay H-4-4 -review

3. ~~Smith~~ H-4-4 -log in

4. Schwinn H-4-4 -approve

5. ~~PRC~~ -log in Final

6. Smith H-4-4 -copy & distribute

Action	File	-return original	Note to Staff
Approval	For Clearance		Per Conversation
As Requested	For Correction		Prepare Reply
Circulate	For Your Information		See Me
Comment	Investigate		Signature
Coordination	Justify		

REMARKS

PA Review For

Check IF:

_____ High Priority

_____ (h) Order Candidate

_____ Imminent & Substantial Endangerment

Low
NFA
I could not
find on
RUCS TSD list

DO NOT use this form as a RECORD of approvals, concurrences, disposals,
clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)

Room No.—Bldg.

Phone No.

5041-102

★ U.S. Government Printing Office: 1987-181-246/60000

OPTIONAL FORM 41 (Rev. 7-76)

Prescribed by GSA
FPMR (41 CFR) 101-11.206

Rev. 3/26/91



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

NCAIPS-missing
Staff-Low
NS

<<ENFORCEMENT CONFIDENTIAL>>

MEMORANDUM

DATE: October 9, 1991

SUBJECT: Preliminary Assessment Review

Facility: Varian Associates

PA date: September 6, 1991

FROM: Frank R. Gardner

TO: Karen Schwinn
Chief, Waste Compliance Branch

THROUGH: Nancy Lindsay, Chief, Corrective Action Section

I. FACILITY DESCRIPTION

Facility Name: Varian Associates
Solid State Microwave Division

Address: 3251 Olcott Street
Santa Clara, CA 95054
Santa Clara County

EPA ID Number: CAT 000 625 392

DTSC Region (if CA): 2

RWQCB Region (if CA): 2

I. FACILITY DESCRIPTION (cont.)

A. Brief Description of Facility Operations and Hazardous Waste Management:

This 3 acre facility is located in the San Tomas Business Park, an area that was farmland prior to 1977. The Varian facility was purchased by Litton Solid State Microwave Division in February 1991. However, operations at the facility have not changed significantly since the change in ownership.

<<ENFORCEMENT CONFIDENTIAL>>

The facility is used for the designing, building, and marketing of high-technology products for customers in industry, communications, defense, science, and medicine. These products include semiconductors, electron tubes, solid state devices, vacuum components, and magnetic components.

Hazardous wastes are generated at the facility from cleaning, etching, plating, developing, degreasing, and other operations. Hazardous wastes generated include flammables, corrosives, and halogenated solvents. Two SWMUs have been identified at the facility as follows:

- 1) *Elementary Acid Neutralization Unit*
- 2) Drum Storage Area (<90 days)

B. SWMU Release Inventory:

The following is a table of Solid Waste Management Units (SWMUs) releases and release potential to the various media. Releases are described with either a "D" for Documented, a "V" for Visual, or a "P" for Potential. Potential releases are further characterized as "H," "M," or "L" for High, Medium and Low. RCRA-regulated units are starred with an asterisk.

#	Name	Soil	GW	SW	Air
1	*Elementary Acid Neutralization Unit*	V	PL		

II. ENVIRONMENTAL SIGNIFICANCE:

A. Hazardous Waste Exposure and Constituent Information

Instructions:

1. Designate as appropriate: D - documented evidence (e.g. analytical data), V - visual evidence (e.g. observed spills, stained soils, etc.), P -potential for release (e.g. past waste management practices suggest probable releases, known soil contamination has probably caused groundwater contamination, etc.). Specify documentation, who saw visual evidence, and/or rationale for potential release, if known.
2. Provide released or potentially released listed waste or constituent information to each appropriate media. Include volume of waste released, if known, toxicity (using toxicity table), and physical state of contaminants (e.g. gas, liquid, sludge, stable solid).
3. Indicate whether release has already been remediated.

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4. Stabilization is appropriate if:

- a. there are actual or imminent exposure threats to humans or ecosystems at levels of concern;
- b. inexpeditiously addressed releases will result in further significant contamination; or
- c. site characteristics suggest that the site may be amenable to control or abatement of imminent threats.

_____ Imminent danger to public health/environment.
Immediate action required; explain:

_____ Stabilization measures appropriate; explain:

 V Release to soil. D V P

On May 5, 1985, approximately 20 gallons of process wastewater was released from the wastewater transfer sump (a components of SWMU 1). This wastewater generally contains nitric acid (toxicity = 9), sulfuric acid (toxicity = 9), and hydrochloric acid (toxicity = 9). However, the concentrations of these compounds and the potential presence of other substances in the release are unknown. The sump was subsequently reconditioned and upgraded to prevent further releases.

 PL Release to groundwater. D V P

Due to the shallow ground water table (8-15 feet), it is possible that the above release to soil could have caused contamination of ground water. However, due to the small volume of the release, the probability of ground water contamination is low.

Reportedly, the facility has installed and sampled three on site monitoring wells to monitor for a plume of contaminated ground water migrating toward the site from an off site source (another Varian facility). The facility has stated that no contaminants have been detected in these wells. However, it is not known what constituents have been monitored for and where these wells are located. Therefore, it is unknown whether these wells could be expected to detect potential ground water contamination related to the release from SWMU 1.

_____ Release to surface water. D V P

_____ Release to air. D V P

_____ High Potential for Migration (media:)

 no Sensitive environmental receptors onsite or within
3 miles (endangered species, wetlands, etc.) Explain:

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The marshes and sloughs of the San Francisco Bay support the following endangered and threatened species:

- California Black Rail (Laterallus jamaicensis coturniculus)
- California Clapper Rail (Rallus longirostris obsoletus)
- Salt Marsh Harvest Mouse (Reithrodontomys raviventris)

However, the San Francisco Bay appears to be approximately 5 miles north of the site.

_____ No releases

Extent of Site Characterization (check one):

 X minimal _____ extensive _____ unknown

B. Exposure Considerations: (D - Documented, P - Potential)
Skip this section if there is no potential or documented release.

1. Groundwater (GW): If potential exposure is a concern, please specify whether release is "highly suspected" (HS). A highly suspected release to groundwater means that there is known soil contamination from a large volume of mobile constituents with high migration potential where there is no known aquiclude between contaminated soil and ground water.

_____ Current GW drinking water source impacted

_____ Sole Source (Class I) aquifer impacted

_____ Impacts on potable water aquifer but not currently used as drinking water

Depth to GW 8'-15' GW flow direction north

Direction/Distance to nearby wells There are at least 7 wells within 1-2 miles of the site. However, the direction to these wells was not specified in the PA.

Population Served 90,900

2. Surface Water (SW): Guadalupe River

no SW drinking water source impacted

Direction/Distance to SW 2 miles to the north

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5 mi. Distance to sensitive environment related to SW contamination

_____ Distance to drinking water supply intake or contact point

Net Precipitation_____ 24 hour rainfall3"

Permitted outfallno Permit Violations_____

X Flood prone area _____ 100-yr flood plain

The site lies within the 500-year floodplain.

no Fishing, recreation water source impacted

no Irrigation, livestock water source impacted

The following near coastal waters and Estuary factors should not be considered in the initial staff prioritizing process. The information will be considered by management with the recommendation.

Check if contamination affects any of the following near coastal waters:

_____ Apra Harbor (Guam)
_____ Babelthaup Island Bays (Palau)
_____ Kaiaka Bay (Hawaii)
_____ Kailua Bay (Hawaii)
_____ Kona Coast (Hawaii)
_____ Morro Bay (California)
_____ Pago Pago Harbor (American Samoa)
_____ Pearl Harbor (Hawaii)
_____ San Diego Bay (California)
_____ Tijuana Estuary (California)

Check if contamination affects either of these Estuary projects:

Low potential X San Francisco Bay/Delta
_____ Santa Monica Bay

3. Air:

no Blowing dust; nearby population

yes Air permits yes Permit violations, minor

no Can contaminants migrate into air?

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 X Target Population < 4 miles (# and distance)
259,316 within 4 miles

4. On site:

Accessibility: inaccessible X
 limited access
 poor security

 no Observed surface soil contamination

III. SITE ENVIRONMENTAL PRIORITY

Instructions: Assign priority based on technical considerations only. Final priority should be briefly explained in terms of potential exposure to human health and the environment based on the technical considerations in Sec. II.

 High Priority

* Known or highly suspected release which has resulted in, or which has high potential for, exposure to human population and sensitive environments (other than near coastal waters and estuary project sites), in the short term (< 10 years). Choose this priority if there is known or highly suspected contamination to a sole source aquifer currently being used.

 Medium Priority

* Known or highly suspected release with potential for exposure to human health and sensitive environments (other than near coastal waters and estuary project sites) in the long term (> 10 years).

 X Low Priority

* Known or highly suspected release, but unlikely adverse effect on human health and the environment.

 No Further Action

* No evidence of a release that could adversely affect human health and the environment.

Comments/Rationale to support priority: Although a release to subsurface soils has occurred through a wastewater sump, the volume of this release is very small (20 gallons). No other releases are suspected or known to have occurred at this facility.

IV. RCRA PERMITTING STATUS

A. Contact Person(s):

#	Name	Contact Date	Phone	Agency
1	Vern Christianson	4/16/91	415/744-2422	EPA-Permits
2	Matt McCarron	10/9/91	510/540-3739	DTSC-Duty Ofcr
3	Tony Morales	10/9/91	510/540-3958	DTSC-Permits
4	Steve Hill	5/14/91	415/464-0422	RWQCB
5	Penny Silzer	5/14/91	415/464-0422	RWQCB

B. Current Status (mark all applicable):

Instructions: For source, indicate file document or numeral for contact person listed above.

 X Operating RCRA TSDF; Source: DTSC files

 Not Operating RCRA TSDF; Source:

 Bankrupt Facility; Source:

 Non-Notifying TSDF - should be a RCRA TSDF but didn't submit a Part A permit application. Source:

 Generator only - never operated as a TSDF. Source:

 Permitted TSDF or Seeking Permit; Source:

Date Permitted:

Agency:

Part B Permit Application Submitted? Y N

Permit Application Review Lead (circle)

EPA

STATE

OTHER (specify)

Corrective Action in (draft) Permit? Y N

Expected Permit Issuance Date:

Permit Expiration Date:

Permit Renewal Application Submitted Y N

(Expected) Renewed Permit Issuance Date:

Renewed Permit Expiration Date:

<<ENFORCEMENT CONFIDENTIAL>>

_____ Closed or Closing Facility; Source:

Closure Plan Submittal (Expected) Date:

Closure Plan Review Lead (circle all applicable):
EPA STATE OTHER (specify)

Closure Plan Approved? Y N Date:

Closure Certification Received? Y N

Clean Closed? Y N

Closure Certification accepted by EPA/DTSC? Y N

_____ Post-Closure permit; Source:

Post-Closure Permit Application Submitted?
Y N

Post-Closure Permit Application Review Lead
EPA STATE Other (specify)

Corrective Action in (draft) Permit Y N NA

(Expected) Post-Closure Permit Issuance Date:

_____ Combination: some units closing, some seeking
permit (i.e. partial closure). Source:
Explain:

X Part A Withdrawal Candidate; Source: 2
Explain:

The facility has applied for generator-only status, stating that SWMU 1 is not a regulated unit since it only involves elementary neutralization and a NPDES discharge to the POTW. DTSC has granted generator-only status for the Drum Storage Area (SWMU 2) because wastes are stored for less than 90 days but has not yet granted this status change to the Elementary Neutralization Unit (SWMU 1), due to the release from this unit. In 1985, the facility repaired and upgraded the sump and has since reapplied for the variance. Mr. McCarron indicated that DTSC is not currently issuing variances for neutralization units because they will probably be exempted in January 1992 through an upcoming "permit-by-rule".

_____ RWQCB Waste Discharge Requirements requiring
investigation and/or remediation in Effect (CA only)

Other Comments: The RWQCB has no involvement with this facility.

V. OTHER REGULATORY ACTIVITIES RELEVANT TO CORRECTIVE ACTION

A. Contact Person(s):

#	Name	Contact Date	Phone	Agency
6	Kwiyukwa Madoshi	6/26/91	415/540-3871	DTSC-Enforc
7	Duncan Campbell	8/26/91	415/449-4722	BAAQMD

B. Activity

Instructions: mark all applicable; note any pertinent outstanding violations.

_____ EPA Enforcement Action with Activities Relevant to Corrective Action; Source:

Date:

Explain:

_____ State Enforcement Action with Activities Relevant to Corrective Action; Source:

Date:

Explain:

_____ Regional Water Board Order or WDR Requiring Corrective Action (CA only); Source:

Date:

_____ Other Agency Enforcement Action with Activities Relevant to Corrective Action; Source:

Date:

VI. OVERALL STATE LEVEL OF INVOLVEMENT IN CLEAN-UP ACTIVITIES

(based on state actions, level of state staff person's oversight)

Mark one:

_____ High _____ Medium _____ Low X None

Rationale: There have been no cleanup activities.

VII. FACILITY WILLINGNESS/ABILITY TO PERFORM CORRECTIVE ACTION

_____ Facility is cooperative

_____ Facility is uncooperative; Explain:

 X Unknown, corrective action has not been required.

_____ Facility may be financially unable to complete work.

VIII. RECOMMENDATION FOR FURTHER ACTION (mark all applicable)

Instructions: Consider factors in Sections I - VII to arrive at final recommendation for further action. If several actions are recommended, prioritize as Action 1, 2, etc.

_____ Imminent and substantial danger to human health or the environment requires issuance of RCRA 7003 Order and/or CERCLA 106 Order.

_____ Stabilization appropriate.

_____ Issue RCRA 3013 order. Release of hazardous waste presents a substantial hazard to human health or the environment (investigation only).

_____ Refer to CERCLA for further follow-up.

_____ Facility unwilling or unable to perform corrective action (explain in Section VII)

_____ Other (e.g. mining waste, active Superfund site, generator only, etc.)
Specify:

X (2) No further CERCLA action

_____ Conduct an RFA

_____ as prelude to expected corrective action order

_____ as prelude to permit issuance

_____ Use a 3007 letter to obtain more information regarding the following items (a subsequent recommendation must be made after the information is received):

_____ Negotiate 3008(h) Consent Order

- Must have documented or probable release of hazardous wastes or constituents

- Must be a RCRA TSDF that has interim status (i.e. not yet permitted, including illegal TSDF that should have had interim status.

- For California, must not have a permit issued by DTSC between 1/13/83 and 11/8/84. Permits issued by DTSC between 11/9/84 and 1/31/86 are considered partial RCRA-equivalent permits; with respect to corrective action, facilities permitted between 11/9/84 and 1/31/86 have interim status.

_____ Incorporate corrective action into post-closure permit through 3004(u) and (v).

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- _____ Incorporate corrective action into permit through 3004(u) and (v).
- _____ Include corrective action in closure plan (appropriate only for surface soil releases near regulated units)
- _____ Ongoing or planned State action is sufficient to address release(s). Defer to state or other agency lead (identify):
- _____ No further RCRA action at present; re-evaluate next year.
- X ① No further RCRA action.

Comments: Note: Facility does not appear on ~~RCRA~~ RCRA TSD list as of 1/27/94

_____ Recommendation Accepted

Karen Schwinn
Chief
Waste Compliance Branch

Environmental Benefits:

Raise priority to _____ due to near coastal waters impacts.

Raise priority to _____ due to estuary project impacts.

When applicable, entity to perform RFA:

- _____ State
- _____ FIT (CERCLA)
- _____ contractor (RCRA)
- _____ Other; specify:

cc: Nancy Nadel, EPI Coordinator, H-4-4

**RECORDS
SEPARATOR
PAGE**

**ENVIRONMENTAL PRIORITIES INITIATIVE
PRELIMINARY ASSESSMENT**

Purpose: RCRA Preliminary Assessment

Site: Varian Associates
Solid State Microwave Division
3251 Olcott Street
Santa Clara, California
Santa Clara County

Site EPA ID Number: CAT000625392
TDD Number: F9-9105-029
Program Account Number: FCA1787RAA
FIT Investigators: Kathy Zavitz
Abby Goldenberg
Date of Inspection: July 30, 1991
Report Prepared By: Kathy Zavitz *KZ*
Report Date: September 6, 1991
Through: Lorene Flaming
FIT Review/Concurrence: *James M. James* 9/4/91
Submitted To: Rachel Loftin
Site Assessment Manager
EPA Region IX



ecology and environment, inc.

160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

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1. INTRODUCTION

As part of its Environmental Priorities Initiative (EPI) program, the U.S. Environmental Protection Agency (EPA) has requested Ecology and Environment, Inc.'s Field Investigation Team (E & E FIT) to conduct a Preliminary Assessment (PA) of Varian Associates, located at 3251 Olcott Street, Santa Clara.

The EPI program integrates the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the 1984 Hazardous and Solid Waste Amendments (HSWA), with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), in order to set priorities for cleanup of the most environmentally significant sites first. The Preliminary Assessment is conducted using CERCLA Hazard Ranking System (HRS) criteria to determine the site's eligibility for inclusion on the National Priorities List and, thus, assists in prioritizing facilities for the RCRA program.

2. SITE DESCRIPTION

2.1 SITE LOCATION AND OWNER/OPERATOR HISTORY

The Varian Associates, Solid State Microwave Division (Varian) site is located at 3251 Olcott Street, Santa Clara, California (lat. 37°20'42"N., long. 121°56'48"W.). The facility covers 3 acres in the San Tomas Business Park, which is zoned for commercial and industrial use. The property is bounded on the north by the Bayshore Freeway and on the east by the San Tomas Expressway (refer to Figure 2-1, Site Location Map)(1,2,4). The site was used for agricultural purposes prior to construction of the Varian facility in 1977 or 1978 (3).

The facility was purchased by Litton Solid State Microwave Division in February 1991. Operations remained the same after the change of ownership (4).

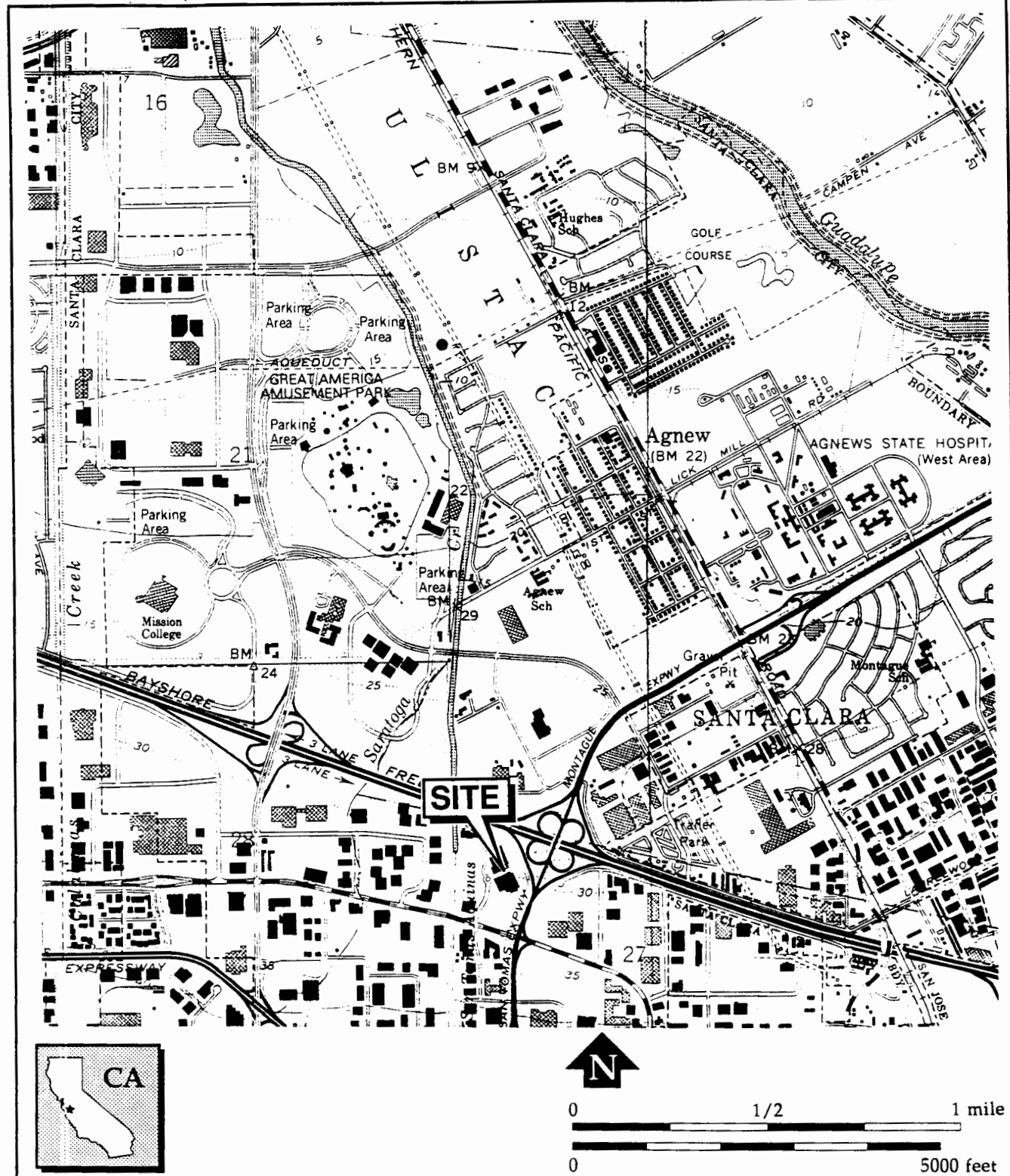
2.2 FACILITY PROCESSES/WASTE MANAGEMENT

2.2.1 Historical

Varian designed, built, marketed and serviced high technology products for customers in industry, communications, defense, science, and medicine. Products included electron tubes, solid state devices, vacuum components and systems based on vacuum technology, analytical instruments, medical systems, and magnetic components (2).

Hazardous wastes generated from semiconductor manufacturing processes are flammables, corrosives, and halogenated solvents. Processes creating waste included cleaning, etching, plating, developing, degreasing, and other operations performed on a small scale as part of production of solid state oscillators, amplifiers, and microwave semiconductors (2,6,12). These wastes were stored for less than 90 days in a drum storage area until they were sent off site for disposal, treatment or

Source: U.S.G.S. 7.5' Milpitas Quadrangle



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Figure 2-1

SITE LOCATION MAP
VARIAN SOLID STATE MICROVAVE DIVISION
3251 Olcott Street
Santa Clara, California

recycling. The drum storage area at the facility had and currently has the capacity to hold a maximum of 20 55-gallon drums (see Figure 2-2, Facility Map) (2).

Varian treated wastewater generated on site in an acid neutralization system. Wastewaters included waste/spent nitric acid, sulfuric acid, hydrochloric acid, and aqua regia solutions. These wastewaters were gravity fed from various work stations and a semiconductor overflow drain and collected in a 450-gallon acid collection sump. Wastewater was then pumped into the 250-gallon holding tank, and subsequently transferred into a 10,000-gallon neutralization tank for treatment. Treatment was accomplished through the addition of sodium hydroxide or hydrochloric acid to adjust pH, prior to discharge into the city sewer. In 1989, the facility treated approximately 1,570 gallons of wastewater per day in the acid neutralization unit (2,8).

On May 5, 1985, a leak occurred in the 400-gallon acid wastewater sump. The leak was contained after an estimated 20 gallons of wastewater escaped. The wastewater sump was reconditioned and upgraded at that time. Varian subsequently removed the existing neutralization tank and replaced it with a new one. A new holding tank was also installed in 1985 (2).

Varian had three satellite accumulation areas at the facility where wastes were temporarily stored before being consolidated in the hazardous waste storage area (4).

2.2.2 Current

Facility processes and waste management at the site under Litton's ownership remain the same (4).

3. REGULATORY INVOLVEMENT

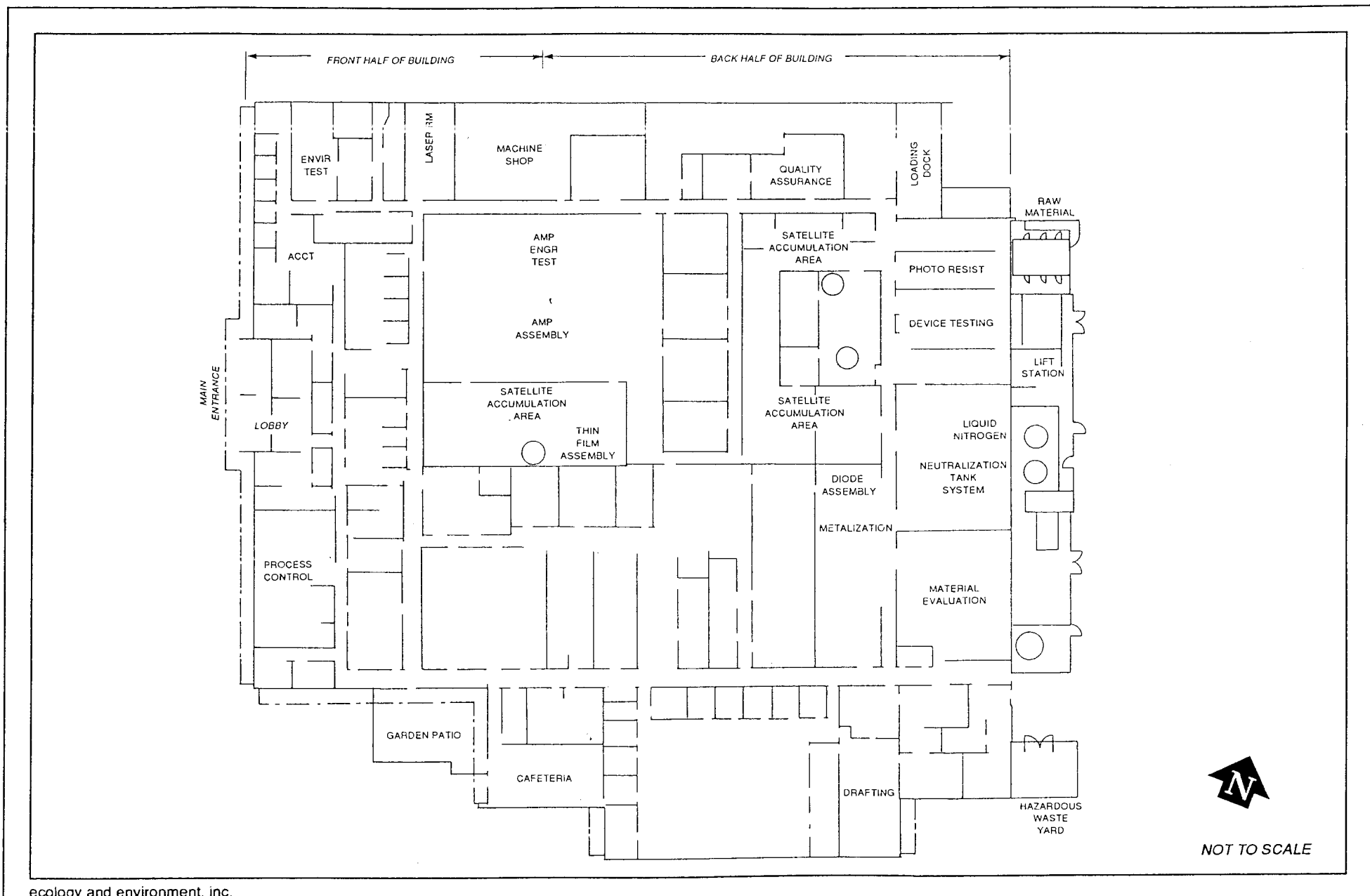
3.1 U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

Varian submitted Part A of the hazardous waste permit application on November 11, 1980 (2). The Varian Associates site is listed in the April 12, 1991 RCRA database as a Generator 1 (large quantity generator) and a Treatment, Storage, and Disposal Facility (TSDF) with a permit status of 4. Permit status 4 means the site is a permit withdrawal candidate. The RCRA database lists a notification date of August 18, 1980 (7). No Part B of the hazardous waste permit application was ever submitted (4).

3.2 CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS)

DHS issued Varian an Interim Status Document (ISD) on March 30, 1981 for storage in containers and treatment (neutralization) in tanks (2,8).

On April 15, 1983, Varian requested a hazardous waste facility permit variance for the container storage area because wastes were stored less than 90 days. On May 6, 1983, DHS received another letter from Varian requesting reclassification of the company's ISD to a "generator-only"



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Figure 2-2

FACILITY MAP
VARIAN SOLID STATE MICROWAVE DIVISION
3251 Olcott Street
Santa Clara, California

status because the facility was not storing hazardous waste longer than 90 days and because the facility was not treating hazardous waste, except for elementary acid neutralization. The facility was granted generator-only status for the storage of hazardous waste in containers in 1984 (but retained its TSDF status for the neutralization unit) (2,8).

Varian requested a variance from hazardous waste permit requirements for the elementary neutralization unit because the Santa Clara publicly owned treatment works (POTW) regulates discharges from this unit. On May 11, 1984, DHS denied this request based on a concern regarding the possible leakage of hazardous waste from the sumps used for neutralization of the acid wastewater. The unit was subsequently replaced. In January 1986, the facility reapplied for a variance on the neutralization unit (2). According to DHS correspondence dated December 1987, the facility has continued to be regulated under Interim Status for this unit (31).

The site has an Extremely Hazardous Waste Disposal Permit for materials including dry cyanide salts, mercury, bromine/methanol, hydrofluoric acid, arsenic, and cyanide. These materials are hauled away in drums (10).

DHS inspected the facility in 1984, 1987, 1989, and 1991 and found only minor violations (2,8,29).

3.3 CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

RWQCB does not maintain any files on the site. The site does not have a National Pollution Discharge Elimination System (NPDES) permit, and it is not on the underground tank list or the fuel leak list (11).

3.4 BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD)

The site has several air permits from BAAQMD for equipment and processes. There have been four minor violations of air regulations over the history of operation at the site (4,30).

3.5 SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT

The facility has an industrial wastewater discharge permit with the San Jose/Santa Clara Water Pollution Control Plant. All sinks drain into a 4-inch acid waste line under the floor. The acid waste line drains into the acid neutralization system. Treated process wastewater is sampled at the neutralization tank and results are sent to the San Jose/Santa Clara Water Pollution Control Plant (12).

4. DESCRIPTIONS OF INDIVIDUAL SOLID WASTE MANAGEMENT UNITS

Distinct Solid Waste Management Units (SWMUs) have been identified to evaluate potential on-site sources of releases to air, surface water, groundwater, and soil. A SWMU is defined as any discernible waste management unit at a facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. As a result of this Preliminary

Assessment, FIT has identified two significant SWMUs at the site. Additional SWMUs may exist.

4.1 ELEMENTARY ACID NEUTRALIZATION (TREATMENT) UNIT

Unit Description: Wastewater from process areas is gravity-fed into either the transfer sump or the neutralization tank. Wastes collected in the transfer sump are pumped into the neutralization tank by pumps which are controlled by float switches. The tank also has a high level alarm. Wastes treated in the neutralization tank first enter a holding tank which equalizes the flow. Then the water enters a mixing tank where the pH is neutralized via a caustic soda or acid injection which is monitored by a pH probe. A pH of between 5 and 10.5 is maintained in the outflow as required by City ordinance (2).

The neutralization tank is fenced and locked at all times (6). The neutralization unit measures 3 feet by 6 feet by 12 feet; the transfer sump is round and measures 4 feet deep and 5 feet in diameter. The treated wastewater is discharged into the San Jose/Santa Clara Water Pollution Control Plant (2).

Date of Start-up: The neutralization tank, holding tank, and transfer sump were installed November 1980 and replaced or reconditioned in 1985 (2,6).

Date of Closure: This unit is active (4).

Waste Managed: Wastewaters are gravity fed from various work stations and the semiconductor overflow drain. Rinsewaters containing solutions of hydrochloric acid, nitric acid, sulfuric acid, phosphoric acid, sodium hydroxide, hydrogen peroxide, ammonium hydroxide, aqua regia solutions with deionized water, nickel, bromine, fluorine, gold and silver are treated in the acid wastewater neutralization unit. The unit treats approximately 1,570 gallons of wastewater a day (2,6).

Release Controls: The neutralization tank is surrounded by a berm (4). The tank is mounted in the ground and is surrounded by asphalt. Tanks and piping are made of polypropylene which is resistant to acid solutions. Pipes are fuse-sealed where joined together (2).

History of Releases: On May 23, 1985, Varian notified DHS by letter of a leak in the 400-gallon acid wastewater sump on May 5, 1985. The leak was contained after an estimated 20 gallons of wastewater escaped. The wastewater sump was subsequently reconditioned and upgraded. Additionally, Varian replaced the existing neutralization tank and holding tank in 1985 (2).

4.2 DRUM STORAGE AREA

Unit Description: The drum storage area is located outside adjacent to the building. It is covered by a roof and is fenced and locked. The dimensions are 20 feet by 20 feet. The area holds a maximum of 20

55-gallon drums. Wastes are stored for less than 90 days until they are sent off site for disposal, treatment, or recycling (2).

Date of Start-up: The unit start date is unknown. Operations began at the site in 1977 (4).

Date of Closure: This unit is active (4).

Waste Managed: Hazardous wastes generated from semiconductor manufacturing processes include flammables, corrosives, and halogenated wastes (2).

Release Controls: The drum storage area is an area of asphalt pavement and has two concrete diked areas recessed into the ground and painted with an epoxy paint. An asphalt berm surrounds the entire area. The drums are situated on wooden pallets to raise them above any rainwater which may collect in the dikes. This rainwater is periodically sampled and pumped out. The area is divided to separate acids, flammables, and halogenated wastes (2,6).

History of Releases: There have been no known releases from this area and no known sampling of this area (4).

5. HRS FACTORS

The Hazard Ranking System (HRS) is a scoring system used to assess the relative threat associated with actual or potential releases of hazardous substances from sites. It is the principal mechanism EPA uses to place sites on the National Priorities List (NPL). FIT has evaluated the following HRS factors relative to this site.

5.1 WASTE TYPE AND QUANTITY

Rinsewater containing solutions of hydrochloric acid, nitric acid, sulfuric acid, phosphoric acid, sodium hydroxide, hydrogen peroxide, ammonium hydroxide, aqua regia solutions with deionized water, nickel, bromine, fluorine, gold and silver is treated in the acid wastewater neutralization unit. The neutralization system consists of a 400-gallon acid wastewater sump, a 250-gallon holding tank, and a 1,000-gallon neutralization tank. The facility treats approximately 1,570 gallons of wastewater a day in the acid neutralization unit (see Section 4.1) (2,6,8,32).

Hazardous wastes generated from semiconductor manufacturing processes including flammables, corrosives, and halogenated wastes are drummed and stored in the hazardous waste storage area and shipped off every 90 days (2). The facility has an Extremely Hazardous Waste Disposal permit which regulates the disposal of dry cyanide salts, mercury, bromine/methanol, and arsenic in polyethylene drums. These wastes are also shipped off site for disposal every 90 days (10). The hazardous waste drum storage area has the capacity to hold 20 55-gallon drums (see Section 4.2)(2).

5.2 GROUNDWATER

The potential for a release to groundwater appears to be low due to the current containment of the wastes; however, there was a leak in the neutralization system in 1985 resulting in a release of 20 gallons of wastewater to the environment (2). Three monitoring wells were installed on site to monitor groundwater conditions: two downgradient and one upgradient. These wells were reportedly installed to monitor migration of groundwater contamination from a nearby Varian site. According to Litton, the results of on-site groundwater monitoring well sampling have not revealed contamination in groundwater at the site. It is unknown what constituents are analyzed for and no data was provided to FIT (4).

The site lies in the Santa Clara Subbasin, a large structural depression in the Santa Clara Valley filled with alluvial and lacustrine deposits. This subbasin consists of a peripheral recharge zone known as the "forebay" and an interior, confined zone. The forebay consists of coarser, more permeable alluvium separated by discontinuous aquitards of limited lateral extent. The site lies in the interior of the Santa Clara Valley within the confined zone. In the vicinity of the site the upper aquifer extends vertically downward to 100 feet below ground surface (bgs). The lower aquifer begins at approximately 190 to 230 feet bgs and extends vertically to approximately 500 feet bgs (13). The depth to groundwater beneath the site fluctuates between approximately 8 and 15 feet bgs (4).

Although the confined zone is characterized by two aquifers separated by a silty clay aquitard, aquifer interconnection exists based on the presence of approximately 10,000 abandoned agricultural wells in the area. Many of these abandoned wells may act as conduits capable of transporting contaminants from the upper to the lower aquifer zones (13,14,19). Most groundwater flow in this area is to the north, toward San Francisco Bay (15).

There are several water purveyors within 4 miles of the Varian site including the Santa Clara Valley Water District, the City of Sunnyvale, the San Jose Water District, and the San Jose Municipal Water District (16,17,18,20,21,23).

The City of Santa Clara blends surface and groundwater to serve a population of approximately 90,900. The sources are: 28 active municipal water wells, the Hetch-Hetchy Project, and the Santa Clara Valley Water District. The Santa Clara Valley Water District gets its water from the Lexington Dam, Stevens Creek, the Sacramento Delta, and the San Felipe Reservoir. There are seven wells within this system that are between 1 and 2 miles away from the site. The wells within this system are the closest municipal wells to the site (16,17,18,23). The City of Sunnyvale drinking water is blended from three sources to serve a population of approximately 120,000. The three sources include: 10 active municipal wells; the Hetch-Hetchy Project; and the Santa Clara Valley Water District (23).

The San Jose Water Company (SJWD) provides water to approximately 750,000 residents in San Jose, Los Gatos, Campbell, Cupertino, and Saratoga. The water supply consists of 55 percent groundwater, with the rest of the water imported from the Hetch-Hetchy Reservoir. SJWD has approximately 147 wells (18,19,20).

The San Jose Municipal Water District (SJM) supplies water to Alviso, Coyote, Evergreen, and northern areas of San Jose. The population served is approximately 80,000. SJM is divided into four service areas, two of which are served solely by groundwater, and two (north San Jose and Coyote) are served by both surface water and groundwater. In 1988, the ratio of surface water to groundwater was 88 percent to 12 percent; this ratio varies due to drought conditions. There are 13 active wells (21).

5.3 SURFACE WATER

The potential for a release of contaminants to surface water is low due to the current containment of wastes and the distance to surface water. The surface water bodies located within 2 miles of the site include San Tomas Creek 0.5 miles east of the site, Saratoga Creek 0.5 miles west of the site, Calabazas Creek 1 mile west of the site, and Guadalupe River 2 miles north. Guadalupe River flows into the south end of San Francisco Bay approximately 5 miles north of the site (1,22). None of these surface water bodies are used for drinking (23).

Beneficial uses of San Francisco Bay include commercial fishing and recreation. The primary commercial fishing conducted in the south bay is for shrimp and herring. Sport fishing also occurs in the southern bay but the reported catches of fish are low. The annual catch of herring from the entire San Francisco Bay in the 1989-90 season (December 1989 - March 7, 1990) was 9,000 tons (25,26).

San Francisco Bay is known to contain many sensitive environments and species. The wetlands and sloughs of the southern San Francisco Bay, including the San Francisco Bay Wildlife Refuge, are habitats for several endangered or threatened animal species. Among these species are the California black rail (Laterallus jamaicensis coturniculus), a state-designated threatened species, the California clapper rail (Rallus longirostris obsoletus), a state and federally designated endangered species, and the salt marsh harvest mouse (Reithrodontomys ravinentris), a state and federally designated endangered species (5).

The 2-year, 24-hour rainfall in the Santa Clara valley is approximately 3 inches (24). The site lies within a 500-year flood zone (27).

5.4 AIR

There are no apparent inadequately contained hazardous substances available to the air pathway. All wastes are treated by the acid neutralization system or stored in closed 55-gallon drums (4). BAAQMD reported 4 minor violations throughout the site's history (30). Refer to Table 1 for the estimated population within 4 miles of the site based on 1980 census figures (28).

Table 1

Population Within 4 Miles of the Site

<u>DISTANCE</u>	<u>POPULATION</u>
0 - 0.25	0
0.25 - 0.5	7,218
0.5 - 1	15,684
1 - 2	43,236
2 - 3	82,983
3 - 4	110,195

5.5 SOIL EXPOSURE

The potential for soil exposure is low. Varian is in a light industrial area. No one lives at the site. The entire site is paved and/or landscaped. The hazardous waste storage area and the neutralization tanks are both in fenced and locked areas (4).

6. SUMMARY OF FIT INVESTIGATIVE ACTIVITIES

6.1 AGENCIES CONTACTED

FIT contacted DHS, RWQCB, Sunnyvale Department of Public Works, Santa Clara Water Department, San Jose Water Department, San Jose Municipal Water District, and California Department of Fish and Game to gather information on this site and environmental conditions in the area (11,15,16,17,19,20,21,23,26,27).

6.2 RECONNAISSANCE OBSERVATIONS

FIT conducted a site reconnaissance July 30, 1991. FIT members Kathy Zavitz and Abby Goldenberg toured the facility and met with Dennis Baker and Don Hall of Litton. Varian sold the facility to Litton in February 1991. Several areas of the facility are being remodeled to accommodate the needs of the new owners. However, most of the operations have not changed since the acquisition. The site was paved and the drum storage area and neutralization system were well-marked and fenced (4). Information gathered during the site reconnaissance is presented throughout this report. For additional information, refer to the Site Reconnaissance Interview and Observations Report in Appendix A and the photographs in Appendix B.

7. EMERGENCY RESPONSE CONSIDERATIONS

The National Contingency Plan [40 CFR 300.415(b)(2)] authorizes the Environmental Protection Agency to consider emergency response actions at those sites which pose an imminent threat to human health or the environment.

There is no apparent need for a referral to EPA's Emergency Response Section at this time because all wastes appear to be adequately contained, no evidence of on-site contamination exists, and the site is secured from public access (4).

8. SUMMARY OF HRS CONSIDERATIONS

The Varian Solid State Microwave Division site is located in a industrial area of Santa Clara, California. The site was used for agricultural purposes prior construction of the facility in 1977 or 1978. The facility was purchased from Varian Associates by Litton Solid State Microwave Division in February 1991. Operations remained the same after the change of ownership.

Varian designed, built, marketed and serviced high technology products for customers in industry, communications, defense, science, and medicine. Products include electron tubes, solid state devices, vacuum components and systems based on vacuum technology, analytical instruments, medical systems, and magnetic components.

Hazardous wastes generated from semiconductor manufacturing processes include flammables, corrosives, and halogenated wastes. Processes creating waste include cleaning, etching, plating, developing, degreasing, and other operations performed on a small scale as part of production of solid state oscillators, amplifiers, and microwave semiconductors. These wastes are stored for less than 90 days in a drum storage area until they are sent off site for disposal, treatment or recycling.

Wastewater generated on site is treated in an acid neutralization system. Treatment is accomplished through the addition of sodium hydroxide or acid to adjust pH, prior to discharge into the city sewer.

Three groundwater wells on site monitor groundwater conditions at the site. According to facility representatives, no contamination has been detected to dated. It is unknown what analysis are conducted.

The following are significant Hazard Ranking System factors associated with the Varian Solid State Microwave Division site:

- o Small apparent waste quantity;
- o Wastes are apparently well-contained;
- o Low potential for a documented release to groundwater, surface water, and/or air; and
- o Groundwater within 4 miles of the site serves a large population.

9. EPA RECOMMENDATION

	<u>Initial</u>	<u>Date</u>
No Further Remedial Action Planned under CERCLA	_____	_____
Higher-Priority for Further Assessment under CERCLA	_____	_____
Lower-Priority for Further Assessment under CERCLA	_____	_____
Defer to Other Authority (e.g., RCRA, TSCA, NRC)	<u>RL</u>	<u>9.11.91</u>

Notes:

10. REFERENCES

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18. Hamill, Candy, San Jose Water Company, and Tom Genolio, E & E FIT, telephone conversation, April 18, 1991.
19. Yoo, Scott, San Jose Water Company, and Nate Johnson, E & E FIT, telephone conversation, March 12, 1991.
20. Yoo, Scott, San Jose Water Company, and Belinda Peters, ICF-Kaiser Engineers, telephone conversation, December 5, 1990.
21. Kenton, Bob, Water Engineer, San Jose Municipal Water District, and Belinda Peters, ICF-Kaiser Engineers, telephone conversation, December 5, 1990.
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28. U.S. Environmental Protection Agency, Office of Toxic Substances, "Graphical Exposure Modeling System," March 1989.
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APPENDIX A

CONTACT LOG AND REPORTS

CONTACT REPORT

AGENCY/AFFILIATION: City of Sunnyvale		
DEPARTMENT: Public Works Department		
ADDRESS/CITY: 221 Commercial Street, Sunnyvale		
COUNTY/STATE/ZIP: Santa Clara, CA 94086		
CONTACT(S)	TITLE	PHONE
1. Alex Sandigo	Department Supervisor	408-730-7800
2.		
PERSON MAKING CONTACT: Yoon K. Toh		DATE: 11/10/89
SUBJECT: Water supply for the City of Sunnyvale		
SITE NAME: Varian Associates*		EPA ID#: CAT000625392

The City of Sunnyvale drinking water is blended from three sources:

1. 10 active municipal wells;
2. The Hetch-Hetchy Project; and
3. The Santa Clara Valley Water District, which gets its water from the Lexington Dam, Stevens Creek, the Sacramento Delta, and the San Felipe Reservoir.

No surface water bodies in the city are used for drinking water purposes. The population of the city of Sunnyvale is approximately 120,000.

* This Contact Report was originally used for San Lazaro Area Plume (CAD982399750).

CONTACT LOG

Facility Name: Varian Associates
Facility ID: CAT000625392

Name	Affiliation	Phone #	Date	Information
Alex Sandigo	City of Sunnyvale Department of Public Works	408-730-7800	11/10/89	See Contact Report.
Mike Dulde	City of Santa Clara Water Department	408-984-3183	11/13/89	See Contact Report.
Tim Iwamura	Santa Clara	408-927-0710	10/22/90	See Contact Report.
Scott Yoo	San Jose Water Company	408-279-7818	12/5/90	See Contact Report.
Bob Kenton	City of San Jose Municipal Water District	408-227-3671	12/5/90	See Contact Report.
Paul Reiley	California Department of Fish & Game	415-688-6340	1/9/91	See Contact Report.
Scott Yoo	San Jose Water Company	408-279-7818	3/12/91	The city of San Jose is served by 148 wells to serve 43.8 percent of the total population of 750,000. There are no surface water intakes in north San Jose. There are numerous agricultural wells in the Santa Clara Valley.
John Linda	City of Sunnyvale Department of Public Works	408-265-2600	3/11/91	Sunnyvale water is blended from wells, Hetch-hetchy and Santa Clara Valley Water District. It would be very difficult to determine breakdown of distribution.

CONTACT LOG

Facility Name: Varian Associates
Facility ID: CAT000625392

Name	Affiliation	Phone #	Date	Information
Dennis Ma	Santa Clara Department of Public Works	408-984-3183	4/1/91 4/18/91	The site lies in a 500-year flood zone.
Dick Gates	Santa Clara Valley Water District	408-265-2600 ext. 223	4/1/91	He will fax FIT info. on stream flow for Saratoga Creek, San Tomas Aquinas Creek and Guadalupe River.
Verne Christianson	Environmental Protection Agency	415-774-2422	4/16/91	EPA does not have a Part B Permit application for Varian.
Candy Hamill	San Jose Water Company	408-279-7808	4/18/91	See Contact Report.
Dennis Ma	Regional Water	415-464-0422	4/18/91	There is no NPDES permit
Steve Hill	Quality			
Penny Silzer	Control Board			There is no NPDES permit for the Varian site. This site is not listed on the South Bay Toxics list, the Underground Storage Tank list or the Fuel Leak list.
Doris Cruz	Department of Health Services	415-540-3300	6/13/91	FIT set up an appointment to review files.
David Hansen	Santa Clara County Health Department	408-299-5822	6/17/91	There is file information.
Kwiyukwa Madoshi	Department of Health Services	415-540-3871	6/26/91	He inspected the facility recently and will send FIT the Inspection Report.
Dennis Baker	Litton Solid State Micro- wave Division	408-988-1331	7/30/91	See Site Reconnaissance Interview and Observations Report.

CONTACT LOG

Facility Name: Varian Associates
Facility ID: CAT000625392

Name	Affiliation	Phone #	Date	Information
Duncan Campbell	Bay Area Air Quality Management District	415-449-4722	8/26/91	The facility has several air permits for equipment and processes. In the past 31 years, the facility has had approximately 4 minor air permit violations. He will send FIT copies of these violations.

CONTACT REPORT

AGENCY/AFFILIATION: City of Santa Clara		
DEPARTMENT: Water Department		
ADDRESS/CITY: 1500 Warburton Avenue, Santa Clara		
COUNTY/STATE/ZIP: Santa Clara, CA 95050		
CONTACT(S)	TITLE	PHONE
1. Mike Dulde	Engineering Aide	408-984-3183
2.		
PERSON MAKING CONTACT: Yoon K. Toh		DATE: 11/13/89
SUBJECT: Water supply to the City of Santa Clara		
SITE NAME: Varian Associates*		EPA ID#: CAT000625392

The City of Santa Clara drinking water is blended from three sources:

1. 28 active municipal water wells;
2. The Hetch-Hetchy Project; and
3. The Santa Clara Valley Water District.

There are a total of 28 active wells in the city of Santa Clara. Wells #31 and #32 have not been drilled. Well #33 has been drilled but is not active. The active wells are: 2-02, 3, 4, 5-02, 6, 7, 8, 9-02, 10, 11, 12, 13-02, 14, 15, 16-02, 17-02, 19, 20-02, 21, 22-02, 22-03, 23, 24, 25, 26, 28, 29, 30.

The population of the city of Santa Clara is approximately 90,900.

* This Contact Report was originally used for Safety Kleen (CAD077187888).

CONTACT REPORT

AGENCY/AFFILIATION: Santa Clara Valley Water District		
DEPARTMENT:		
ADDRESS/CITY: 5750 Almaden Expressway, Santa Clara		
COUNTY/STATE/ZIP: Santa Clara, CA 95118		
CONTACT(S)	TITLE	PHONE
1. Tim Iwamura	Hydrogeologist	408-927-0710
2.		
E & E PERSON MAKING CONTACT: Carol Weinstein		DATE: 10/22/90
SUBJECT: Area geology and groundwater conditions		
SITE NAME: Varian Associates*		EPA ID#: CAT000625392

Groundwater flow in the area is to the north. In the forebay zone, groundwater aquifers can be considered as a single hydrologic unit. In addition, perched water is not uncommon in this area.

* This Contact Report was originally used for Stauffer Chemical Company (CAD06356642).

CONTACT REPORT

AGENCY/AFFILIATION: San Jose Water Company (SJWC)		
DEPARTMENT:		
ADDRESS/CITY: 374 West Santa Clara Street, San Jose		
COUNTY/STATE/ZIP: Santa Clara, California 95196		
CONTACT(S)	TITLE	PHONE
1. Scott Yoo	Water Quality Manager	408-279-7818
2.		
PERSON MAKING CONTACT: Belinda Peters		DATE: 12/5/90
SUBJECT: Information on the water supply of San Jose		
SITE NAME: Varian Associates*		EPA ID#: CAT000625392

The San Jose Water Company (SJWC) provides water to most of San Jose (east to U.S. Highway 101 and west of Snell Road), Los Gatos, Campbell, Cupertino, and Saratoga. The foothills of Saratoga and Los Gatos are served by small independent companies. The water supply is a combination of groundwater and water imported from the Hetch-Hetchy Reservoir. The total population served by SJWC in 1989 was 750,000 residents. Mr. Yoo is sending me a water quality report which gives the water provision percentages and well location data. SJWC has 147 wells and no well produces greater than 40 percent of the water pumped.

* This Contact Report was originally used for Keystone Consolidated Industries (CAD009141433).

SITE RECONNAISSANCE INTERVIEW AND OBSERVATIONS REPORT

Ecology and Environment, Inc.		
Field Investigation Team (FIT)		
160 Spear Street, Suite 1400		
San Francisco, California 94105		
(415) 777-2811		
E & E PERSON(S) CONDUCTING INTERVIEW AND MAKING OBSERVATIONS:		
Kathy Zavitz and Abby Goldenberg		
FACILITY REPRESENTATIVE(S):	TITLE:	PHONE:
Dennis Baker	Facility Manager	408-988-1331
Don Hall		408-988-1331
SITE NAME: Litton Solid State Microwave (formerly Varian)		DATE: 7/30/91
CITY/STATE: Santa Clara, CA		EPA ID#: CAT000625392

The following information was obtained during the interview:

Litton bought the facility on February 25, 1991 from Varian Associates. Operations and processes did not change dramatically after the sale.

The facility has been in operation since 1978. The area was agricultural land before that.

The facility is approximately 3 acres.

The facility has a variance for its hazardous waste permit regarding the drum storage area. The facility does not have a variance for the acid treatment facility, it is operated under a permit-by-rule from Department of Health Services.

There are three groundwater monitoring wells on site; one upgradient of the facility, two downgradient. These wells were installed in 1983 to monitor groundwater conditions in the area. Varian has another site close by that has had contamination problems, and the wells were put in to see if the plume had reached the Olcott Street facility. Nothing on site (no spills or leaks) prompted this installation. Sampling is conducted regularly and no contamination has ever been detected. The constituents sampled for were not discussed in the interview. Sampling results are not sent to any agency.

No Part B has ever been submitted.

Depth to groundwater at the site varies from 6 to 15 feet below ground surface.

There are three satellite areas where hazardous wastes are kept until they are consolidated in the hazardous waste storage area.

The following agencies regulate the site actively: Santa Clara Fire Department, DHS, County of Santa Clara Hazardous Materials Department, San Jose Water Pollution Control Board, and EPA.

Water from the wastewater treatment process goes into the sanitary sewers.

The facility no longer uses freon in its processes.

The following observations were made during the site reconnaissance visit:

The facility is located in a light commercial business park. The site is paved with landscaping surrounding the perimeter of the building.

The neutralization system and the drum storage area are well-contained with berms. Each area is surrounded by a fence. There was no evidence of spills or leakage from either area.

APPENDIX B

PHOTODOCUMENTATION

FIELD PHOTOGRAPHY LOG SHEET

DATE: 7/30/91

WEATHER: warm
and sunny

PHOTOGRAPHED BY:
K. Zavitz



DESCRIPTION: The drum storage area is fenced and bermed. Drums are separated according to hazard classification.

DATE: 7/30/91

WEATHER: warm
and sunny

PHOTOGRAPHED BY:
K. Zavitz

DESCRIPTION:
Acid neutralization
system. This area
is fenced and bermed.



**RECORDS
SEPARATOR
PAGE**

***** CONFIDENTIAL *****
***** PREDECISIONAL DOCUMENT *****

SUMMARY SCORESHEET
FOR COMPUTING PROJECTED HRS SCORE

CONFIDENTIAL

SITE NAME: Varian Associates

CITY, COUNTY: Santa Clara, Santa Clara County

EPA ID #: CAT000625392

EVALUATOR: Kathy Zavitz

PROGRAM ACCOUNT #: FCA1787RAA

DATE: August 10, 1991

Lat/Long: 37°20'42" 121°56'48"

THIS SCORESHEET IS FOR A: PA SSI LSI

S[Re PA Redo Other (Specify) EPI-PA

RCRA STATUS (check all that apply):

☒ Generator ☐ Small Quantity Generator ☐ Transporter ☒ TSDF

☐ Not Listed in RCRA Database as of (date of printout) / /

STATE SUPERFUND STATUS:

☐ BEP (date) / / ☐ WQARF (date) / /

☐ No State Superfund Status (date) / /

	S pathway	S ² pathway
Groundwater Migration Pathway Score (S _{gw})	23.81	566.92
Surface Water Migration Pathway Score (S _{sw})		0*
Soil Exposure Pathway Score (S _s)		0*
Air Migration Pathway Score (S _a)		0*
$S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2$	XXXXXXXXXXXX	
$(S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2)/4$	XXXXXXXXXXXX	141.73
$\sqrt{(S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2)/4}$	XXXXXXXXXXXX	11.9

GROUNDWATER MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors

	<u>Likelihood of Release</u>	<u>Maximum Value</u>	<u>Projected Score</u>	<u>Rationale</u>	<u>Data Qual.</u>
1.	Observed Release	550			
2.	Potential to Release				
2a.	Containment	10			
2b.	Net Precipitation	10			
2c.	Depth to Aquifer	5			
2d.	Travel Time	35			
2e.	Potential to Release [Lines 2a x (2b+2c+2d)]	500			
3.	Likelihood of Release (Higher of lines 1 or 2e)	550			
<u>Waste Characteristics</u>					
4.	Toxicity/Mobility	a			
5.	Hazardous Waste Quantity	a			
6.	Waste Characteristics (lines 4 x 5, then use Table 2-7)	100			
<u>Targets</u>					
7.	Nearest Well	50			
8.	Population ^d				
8a.	Level I Concentrations	b			
8b.	Level II Concentrations	b			
8c.	Potential Contamination	b			
8d.	Population (lines 8a+8b+8c)	b			
9.	Resources	5			
10.	Wellhead Protection Area	20			
11.	Targets (lines 7+8d+9+10)	b			
<u>Likelihood of Release</u>					
12.	Aquifer Score [(Lines 3 x 6 x 11)/82,500] ^c	100			
<u>Groundwater Migration Pathway Score</u>					
13.	Pathway Score (Sgw), (highest value from line 12 for all aquifers evaluated)	100	<div style="border: 1px solid black; width: 80px; height: 30px; display: flex; align-items: center; justify-content: center;">c</div>		

- a Maximum value applies to waste characteristics category.
b Maximum value not applicable.
c Do not round to the nearest integer.
d Use additional tables.

GROUNDWATER PATHWAY CALCULATIONS

8. Population

Actual Contamination

Well Identifier	Contaminant Detected	Concentration (Note Units)	Benchmark	(A) Apportioned Population Well Serves	(B) Level* Multip.	(A x B)

Sum (AXB) Level I

* Multipliers

Level I = 10
Level II = 1

Sum (AXB) Level II

Potential Contamination

Distance (miles)	Total Number of Wells Within Distance Ring	Total Population Served by Wells Within Distance Ring	Distance-Weighted Population Values "Other Than Karst" (Table 3-12)* (A)
0 to 1/4			
>1/4 to 1/2			
>1/2 to 1			
>1 to 2	7	51,200	409,600
>2 to 3	13	108,800	655,360
>3 to 4	11	88,200	352,800
Sum (A)			1,417,760

Potential contamination = $\frac{\text{Sum (A)}}{10} = 141,776$

* For drinking water wells that draw from a karst aquifer, see the Distance-Weighted Population Values for "Karst" in Table 3-12.

HRS RATIONALE

Pathways not assigned a score: There is an extremely limited potential for a release to surface water because known wastes are well contained. In addition, the dilution-weighting factor of the San Francisco Bay reduces the potential targets dramatically. Air and onsite pathways are based on current conditions. Wastes are not currently available to these routes.

GROUNDWATER

1. There has been no documented release of contaminants to groundwater at this site. In addition, the potential to release appears to be low because of a high level of containment of wastes.
2. Hazardous waste at Varian is stored in 55-gallon sealed drums. Drums are stored in a bermed area.
3. As per Figure 3-2 a net precipitation factor value of 6 is obtained for the city of Santa Clara.
4. The depth to groundwater in this area is approximately 15 feet below ground surface (bgs). As per Table 3-5, a depth to aquifer factor value of 5 is obtained.
5. The facility lies on clay-rich sediments approximately 20 feet thick. As per Table 3-6, an hydraulic conductivity of 10^{-6} is obtained. As per Table 3-7, a travel time factor value of 15 is obtained.

	Toxicity	Mobility	T/M
6 Arsenic	10,000	.01	100
Bromine	---		
Cyanide	100	---	
Fluorine	10	---	
Gold	--		
Silver	1,000	2×10^{-9}	
Mercury	10,000	2×10^{-9}	
Methanol	1	1	
Nickel	10,000	2×10^{-5}	

A T/M value of 100 was obtained for arsenic.

7. Approximately 20 55-gallon drums of hazardous waste are stored on site at any one time. As per Table 2-5, a waste quantity value of 2.42 is obtained. As per section 2.4.2.2, a hazardous waste quantity factor value of 10 is obtained.
8. The water well nearest to the site is a Santa Clara Water District well, located approximately 1.5 miles from the site. As per Table 3-11, a nearest well factor value of 5 is obtained.

9. See Calculation table. As per Table 3-12, the total, distance weighted population within 4 miles of the site is 13,888. This value yields a potential contamination factor value of 1,388.
10. There are several wells in the area that are used for commercial agriculture.